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EDUCATION ETHICS



LEADING ETHICAL LEADERS

HIGHER EDUCATION INSTITUTIONS, BUSINESS SCHOOLS AND SUSTAINABLE DEVELOPMENT GOALS

11

EDITORS : AMÉLÉ ADAMAVI-AHO EKUÉ / DIVYA SINGH / JANE USHER

Globethics

Leading Ethical Leaders

Higher Education Institutions, Business Schools and the Sustainable Development Goals

Leading Ethical Leaders

Higher Education Institutions, Business Schools and the Sustainable Development Goals

Amélé Adamavi-Aho Ekué, Divya Singh,
and Jane Usher (Eds.)

Globethics Education Ethics Series No. 11

Globethics Education Ethics Series

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INTRODUCTION

The importance of promoting and contributing to the discourse on the 2030 Agenda of Sustainable Development Goals (SDGs), and more importantly the pursuit of practices to achieve the outcomes, cannot be sufficiently emphasized. The purpose of these goals was the acknowledgement by the United Nations and the world in 2015, including both developed and developing countries, for need to balance economic growth, social equity, and environmental protection. It is a "call for action" to make a difference to our world - for people and planet that is epitomized by harmony and equitable coexistence.

While each goal prioritizes a specific focus area collectively, they constitute an integrated ecosystem for global sustainability and responsible citizenship. To achieve the SDGs requires everyone, individually and cooperatively, to play their part. The deadline to attain these goals is 2030 – and with world events being where they are, the question arises: *Will we meet the deadline with tangible changes at global, national, and on the ground, for the people, financial sustainability, and the environment?*

This Book acknowledges the famous exhortation of Nelson Mandela that it is only through education that we can change the world, and, thus, poses the question to higher education institutions recognizing the width, breadth, and depth of the catalytic role that the sector can play in transformation. The Book examines the roles, relationships, and influence of higher education institutions in support of their specific national agendas, as well as the global dialogue for change. It was not surprising to receive chapters outlining the diverse and multifaceted initiatives of higher education institutions, leaving no doubt of the

pivotal role and active contributions of higher education institutions through their commitments to engaged scholarship that includes learning and teaching, research and innovation, and community engagement and social impact.

The chapters in the book recognize that there are different levels of society, namely the micro-, meso- and macro-level and the ecosystem of humanity spans all levels. The micro-level is concerned with what we do in small systems that comprise individuals, families, and our relationships with others in our immediate environment; and the meso-level refers to our organizations, our communities within one nation. These different groups of people are seen as systems which are medium in size and are specific to each country. Finally, we need to be aware of macro-level systems which encompass all different nations across the globe, as well as the global legal and economic systems. The three levels are intrinsically intertwined and have an influence upon one another. A mature social system will, thus, be characterized by a fundamental awareness of how each level impacts the progress the world is making towards achieving peace and harmony, and concomitantly, the SDG vision.

Looking particularly at higher education – at both the national and global level - we realize how important these systems are, from a meso-level within separate countries, as well as the macro-level system which incorporates global nations and HE systems. It is incumbent upon all HEIs to produce graduates who are socially responsible citizens, who observe the world around them and choose to work for the common good, for their communities and society at large. The reflection on the global financial crisis of 2008 and the people who were at the root cause of the problems is an analogy worth repeating:

> … teachers in Business schools and educational institutions who had over the years turned out first class students and highly successful professionals and excellent specialists wondered at

> how this could happen with their bright students acting in freedom as 'moral crooks' but lacking in responsibility and virtue! Educational institutions produced them. These institutions are challenged to revisit their educational content, the school curricula and their overall systems which produce bright managers lacking in integrity and engage in teaching, training and research that links the heart and the mind of the human person in wholeness. [Obiora Ike 2017]

The need to further expand society's understanding of the integrated challenges of the SDGs has never been more apposite. This publication provides a lens that concretely measures the contribution of higher education to the SDG conversation, and its challenges and opportunities.

The unique role of higher education institutions as engines of change is undergirded by the ability of universities to influence and shape society through the graduates that emerge from these institutions. Graduates who are ethical and responsible leaders, are those who have the potential to influence progress actively and creatively, grounded in the ideologies of the SDGs and the actions proposed for a better world. Interestingly, there has also been an upsurge over the past few years, of student awareness and their need to focus on social responsibility and global citizenship.

The Book has four sections with specific focus areas, and the sections mimic the themes of the seventeen SDG Goals. Section One deals with the issues of societal justice, equality, and education; Section Two with the economy, labour, and innovation; Section 3 highlights the areas of ecology and sustainability; and Section Four covers societal infrastructures and collaboration.

Section One: Societal Justice, Equality and Education focuses on the potential contribution of higher education institutions in society, the need for ethical leadership that leads to social justice, and how education facilitates progress in sustainability. Importance is placed on embracing

education that leads to sustainable education as a focus in higher education, and the need for infrastructure in institutions that is sustainable and supports transparency, ethical relationships, and therefore ethical decision making. In addition, this Section illustrates the role that institutional research plays in addressing real world problems, and especially research that is transformative and interdisciplinary and can integrate problem solving views with which to address multiple SDGs at a time.

Section Two relates to the essence of Economy, Labour and Innovation and explores the use of integrated reporting to enhance strategic planning and processes within the higher education milieu. It sets the challenge for higher education institutions to integrate responsibility and sustainability in curriculum formulation and design as an integral outcome of producing graduates relevant for the 21st century. The section shares good practices on how ethical identity can be developed within the curriculum through outcomes focused on responsibility and virtue.

Section Three pertains to Ecology and Sustainability, specifically SDG 8 which refers to ensuring "Decent work and economic growth", and SDG 13 where the focus is on "Climate Action". The contribution highlights the need for responsible leadership against the backdrop of economies ravaged by the Covid-19 pandemic. The concept of systematically promoting education for small businesses to be developed to progress towards SDG 8 and understanding the need for a multi- and interdisciplinary type understanding to address the SDG agenda.

Finally, Section Four engages with Societal Infrastructures and Collaboration highlighting the practice of sustainable architectural solutions from practice and education to demonstrate ways of achieving the SDG standards. In addition, the pervasive issues of violence, poverty, inequality, war, and gender-based violence; and how peace education through dedicated structures has had a positive impact on

challenging various forms of violence is discussed, and solutions provided for other higher education practitioners to consider. Section Four concludes with an informative overview of the extent to which South African Business Schools specifically have integrated the SDGs into their curricula. It is a worthwhile read for all business school associations across the world as it relates fundamentally to the role of ethical leadership and responsible management that is linked to the SDGs and the Principles of Management Education (PRME) which is a United Nations (UN) initiative.

The Book provides insights into what is currently taking place in higher education institutions worldwide and the influence that institutions have had on the global SDG landscape. The intent is to circulate existing knowledge, sharing best practices from across the globe in the spirit of academic collaboration. The scale of what still needs to be done before 2030 is enormous. Thus, rather than every institution trying to innovate an unique solution, this Book shares knowledge and successful practices, opportunities, some challenges identified and the effective work-arounds. Our hope is that the Book will inspire readers' creativity and motivate them to adopt or adapt the relevant practices to support their national agenda and address global progress towards achieving the SDGs.

Divya Singh, Jane Usher
Stellenbosch, South Africa
April 2023

SOCIETAL JUSTICE, EQUALITY AND EDUCATION

1

ETHICAL LEADERS: LESSONS LEARNED FROM A SUSTAINABLE INFRASTRUCTURE DELIVERY PROCESS

Chidiebere Onyia

Keywords

Ethical leadership; social rules of practice; Nigeria; Higher Education Institutions.

Abstract

This chapter focuses on ethical considerations that guide developing and implementing sustainable higher education infrastructure delivery processes in developing nations. Sustainable Infrastructure thinking should be supported with clear policies to inform the leadership decision process. These decisions should also factor in climate mitigation and adaptation concerns that have been relegated to a check-off list in the past. Strong collaborations across the stakeholder groups to ensure clarity of purpose, transparency in procurement and project monitoring stages are critical for piloting an ethical culture. Ethical leaders must be mindful of the nuances that may erode the values that underpin setting a culture where the learning environment strengthens ethical champions.

This chapter explores how ethical relationships can boost ethical decision-making process in higher education institutions. Ethical leaders and their teams set out the "social rules of practice" to support the engagement and management of all relations in developing sustainable infrastructure that supports academic and students' learning outlook (Frost, 2016, 3)[1]. For institutions where unethical practices are rife, ethical champions should demonstrate that ethical behaviour is beneficial and possible. The chapter will build on ethical leaders who showed resilience and courage in developing a model power infrastructure project in selected higher education institutions in Nigeria*.

Introduction

Numerous scholars have suggested ethical leadership as required to improve transparency, accountability, and the quality of services delivered in higher education institutions (Patel, 2021, 4)[2]. Unethical behaviour is not a new concern in private and public institutions;

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[1] Mervyn Frost (2016), Universities' role in providing ethical leadership. University World News. Retrieved March 16, 2021 from https://www.universityworldnews.com/post.php?story=20160923111709132

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[2] Patel Fay (2021). Why we need ethical leadership in international higher education. Retrieved August 28, 2021, from https://www.universityworldnews.com/post.php?story=20210702150113723, 4.

however, numerous research and commentaries have not affected the expected impactful and sustainable change. It seems that the depth of unethical conduct has widened in Higher Education Institutions (HEIs), ranging from issues of plagiarism, preferential and non-merit-based recruitment models for faculty and leadership, sexual harassment, misappropriation of institutional finances, to procurement processes that do not meet global transparency standards. Developing nations are usually the focus of most unethical commentaries mainly because of weak institutions and, in some cases, a culture that expects those in leadership positions to reflect an unethical mindset in critical institutional decision-making processes. Patel (2021, 4)[3] posed a few questions which I consider important in beginning the process of creating a culture of ethical behaviour in higher education institutions globally,

> "What has enabled such transgressions to take place? How should stakeholders demand accountability from presidents, vice-chancellors, provosts, financial administrators, and boards of governance? And how can the sense of impunity which protects executive leadership transgressions be removed, thereby making their organisational operations, around finances and forms of harassment, more transparent?"

To address these core questions, this chapter provides a few examples of how modelling ethical relationships and intentionally creating an environment that encourages the emergence of ethical champions can change unethical social rules of practice and deliver on expectations for quality and sustainable infrastructure in HEIs in Nigeria. Although this study is focused on Nigeria, it's important to note that ethical transgressions are a global occurrence, especially in

[3] Fay Patel (2021). Why we need ethical leadership in international higher education, *University World News*, 4.

developing nations where weak institutions, corruption, and low expectations for quality governance is the norm. Agbude and Etete (2013, 484)[4] suggested that "the influence of corruption flows from the leaders to the citizens. Since the state lost its role as a protector or a provider of viable socio-eco-political constructs for the realizations of citizens' goals and projections, the people took to personal survival through the philosophy of the ends justifies the means".

In a conversation with one of the higher education leaders on the implications of unethical conduct in their processes, he said that, "the problem with unethical decisions in this university is that it has become the norm, to hear people hired into leadership positions without any consideration for merit or institutional process; therefore, when these people become leaders, they perpetuate this behaviour creating a culture that thrives on corrupt practices and no accountability".

For instance, the procurement standards of most universities stipulate a minimum of three quotes from independent companies to allow for least cost procurement that does not compromise quality while saving costs. Unfortunately, the practice is that some staff collude with companies to collect three receipts/proposals and ensure that the pricing in the selected proposal is lower than the other two. This is insider information that gives one bidder an undue advantage. These practices are known by some senior academics like Deans and Heads of Departments who allow this behaviour to continue because they do not have the support at the principal officer level to stop this culture and hold people accountable. Imagine the unethical champions this culture has recruited and nurtured over the years and the harm they have done to the university processes and products. Research offers a pessimistic

[4] Agbude, G. A., & Etete, P. I. (2013). Ethical Leadership, Corruption and Irresponsible Governance: Rethinking the African Dilemma. Mediterranean Journal of Social Sciences, 4(6), 484. Retrieved from https://www.richtmann.org/journal/index.php/mjss/article/view/329.

(although limited) view regarding the effectiveness of ethical champions in teams and the social consequences they are likely to experience (Chen, Treviño, and Humphrey, 2020, 245-273)[5].

A 2017[6] study by the *Mumbai Business Standards* reflect my experiences engaging with some higher education institutions and public sector leaders in Nigeria where unethical decisions are justified during procurement processes. The study pointed out that "inconsistency and ambiguity in encouraging high ethical standards and insufficient understanding of compliance programmes have increasingly led employees to justify unethical behaviour at the workplace," said EY's Asia-Pacific (APAC) Fraud Survey. The survey results further explained issues regarding "justifying fraud, corruption and unethical behaviour, 78 per cent of respondents said bribery and corrupt practices occur widely while 31 per cent said they would offer cash payments to win or retain business." (p.1)

Higher education institutions in Nigeria, especially the public and state-funded institutions, are required to adhere to established procurement guidelines[7]. These guidelines identify five basic concerns that govern procurement policies:

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[5] Anjier Chen, Linda Klebe Treviño, and Stephen E. Humphrey (2020). Ethical champions, emotions, framing, and team ethical decision making. *Journal of Applied Psychology,* Vol 105 (3). March 2020, pp. 245-273. Retrieved on September 1 from https://doi.apa.org/doi/10.1037/apl0000437

[6] Business Standard (2017, June 14). Majority of employees for unethical behaviour: Survey. Retrieved from https://www.business-standard.com/article/news-ians/majority-of-employees-for-unethical-behaviour-survey-117061401008_1.html, 1

[7] Federal Republic of Nigeria Procurement Procedures Manual for Public Procurement in Nigeria (Second edition, January 2011) Retrieved on August 26, 2021, from https://acetel.nou.edu.ng/uploads/resources/procurement-manual.pdf, 6.

1. To ensure that goods and services needed are procured with due attention to economy and efficiency;
2. To ensure that public fund is used to buy only those goods and services needed for national development;
3. To give all qualified bidders an equal opportunity to compete for contracts;
4. To encourage the development of local contractors and manufacturers; and
5. To ensure that the procurement process is transparent

Our interviews with higher education institution workers revealed that the above expectations are known to decision-makers but not considered a non-negotiable aspect of the procurement process. We discovered that, selective decisions are made based on financial incentives, recommendations by political elites, and in some cases, an outright directive from highly placed members of the government. Engaging in a massive procurement of engineering, procurement, and construction management (EPCM) contractors and electrical equipment ordinarily is a difficult task but can be exacerbated when the decision-makers are averse to ethical considerations. To buttress this point, some of the individuals interviewed shared diversionary tactics adopted by fellow staff to delay the procurement process and create opportunities that encourage companies to explore unlawful means to give them an undue advantage during the different bid stages. The ethical leaders interviewed focused on highlighting and strengthening the use of the existing legal framework as a driver for ethical messaging and practice. This is reflected in their internal strategy to mitigate these risks within institutions where the culture encourages unethical conducts and actively emboldens new entrants to adapt and grow within these behavioural expectations. We discovered that the powerful institutional players

resisted these initiatives by using external and influential stakeholders to pressure these leaders to allow the selection of their preferred bidders. In some cases, they were threatened with termination or transfer from their current position, while in other instances, they were offered a bribe to allow less qualified companies win the bid.

We also discovered that insider information was also used to gain a competitive advantage, particularly in the commercial aspect of the bid where costing information submitted by more technically qualified companies were shared with the less capable companies to influence the total score received in that section of the selection ranking. These are some of the challenges the ethical leaders discussed in this chapter had to overcome to get to the actual project commissioning.

Lessons Learned

Lessons learned from various studies and personal experiences show that unethical leadership behaviour exacerbates the delivery of quality services across the different subsets of a learning community. Research has revealed that higher education institutions are not immune to the manifest unethical behaviour in some public sector leadership decisions and actions. This chapter further explores some ethical leadership experiences that led to the delivery of electricity generation infrastructures in selected higher education institutions and teaching hospitals in Nigeria. Higher education institution leadership interviewed agreed that leaders should be intentional in creating an environment that fosters the emergence of ethical champions and behaviour. It is important to note that "companies become ethical one person at a time, one decision at a time" (McLaverty and McKee, 2018, 1)[8]. The ethical

[8] Christopher McLaverty and Annie McKee (2016). What you can do to improve ethics at your company. *Harvard Business Review.* Retrieved August 29,

culture they insisted on supports accountability and strengthens the decision processes across the institution. According to Cheteni and Shindika (2017, 6)[9], "Ethical leaders must also gain followers' attention to the ethics message by engaging in explicit ethics-related communication and by using reinforcement to support the ethics message. They make organisational decisions carefully aligned with ethical values and consider that the right decision is always that which falls on the ethics side."

It is also essential to set the context for this commendable effort by public and higher education institutions leaders who pioneered this effort. Ebekozien (2019, 1)[10] describes this context in his study, "The findings showed that lack of leadership, weak law, fear of unknown and greed were ranked as the causes of unethical practices. Inflated contract sum, bribery and corruption, shoddy construction and collusion tendering were ranked as the effects of unethical practices." These issues pointed out in the study are not new, as was shared by Chinua Achebe in his book, "The Trouble with Nigeria."

> "The trouble with Nigeria is simply and squarely a failure of leadership. There is nothing wrong with the Nigerian character. There is nothing wrong with Nigeria land or climate or water or air or anything else. The Nigerian problem is the unwillingness or inability of its leaders to rise to the responsibility, to the challenge of personal example which are the hallmarks of true

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2021 from https://hbr.org/2016/12/what-you-can-do-to-improve-ethics-at-your-company?ab=at_art_art_1x1 p.1

[9] Cheteni, P., & Shindika, E. S. (2017). Ethical leadership in South Africa and Botswana. Brazilian Administration Review, 14(2), e160077. https://doi.org/10.1590/1807-7692bar2017160077, 6.

[10] Ebekozien, A. (2019). Unethical Practices In: Procurement Performance of Nigerian Public Building Projects: Mixed Methods Approach, Theoretical and Empirical Researches in Urban Management, Research Centre in Public Administration and Public Services, Bucharest, Romania, vol. 14(3), 41-61, August.

> leadership. I am saying that Nigeria can change today if she discovers leaders who have the will, the ability, and the vision". (Achebe, 1983)[11]

Therefore, the second lesson learned is that promoting an ethical institutional culture is critical and can promote ethical conducts when sustained ethical messaging and leadership actions support and recognizes ethical champions. Ethical leaders must be intentional in the decision-making process adopted in their organizations. They should align a strategic communication framework that highlights basic but critical actions that strengthen the pillars of an ethical culture. This may sound simple in developed nations but not the case in developing nations where unethical conduct is often part of social rules of practice and, in some cases, celebrated. Studies have pointed out that "unethical behaviour takes a significant toll on organizations by damaging reputations, harming employee morale, and increasing regulatory costs—not to mention the wider damage to society's overall trust in business" (Epley and Kumar, 2019, 2)[12].

While measured in their responses, the ethical leaders we interviewed were clear that there must be a sense of urgency in encouraging emerging ethical champions to build strategic relations and celebrate these individuals when milestone successes have been achieved regardless of how small these milestones may be compared to the overall expectations. If integrated effectively into processes such as the procurement of public goods, these lessons can redefine the approach to practical and demonstrable ethical leadership models in developing nations. Although each country must deal with its peculiarities as it

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[11] Achebe, Chinua. (1983). The Trouble with Nigeria. Oxford: Heinemann. African Writers Series, p.1.

[12] Nicholas Epley and Amit Kumar (2019). How to design an ethical organization. *Harvard Business Review.* Retrieved on September 05, 2021 from https://hbr.org/2019/05/how-to-design-an-ethical-organization, 2.

relates to higher education decision processes, we have ample research, and personal experiences to support the lessons learned conversation in this chapter. Ethical leadership, therefore, is not an abstract concept defined within a narrow prism of religious morality but a practical reflection of sets of actions reflecting values that model and promote ethical leadership decisions which makes it difficult for the emergence of a culture that undermines ethical behaviour, promotes lack of accountability, and fosters intimidation of ethical leaders.

Ethical Champions

Ethical leaders and their teams should set out the "social rules of practice" that support the engagement and management of all relations in developing sustainable infrastructure that supports academic and students' learning outlook (Frost, 2016, 3)[13]. The leadership of the Rural Electrification Agency (REA) led by Damilola Ogunbiyi shared with the Power team at Nigeria Infrastructure Advisory Facility (NIAF, which was the then DFID now FCDO funded facility) an initiative in 2015 about transforming the supply of power to HEIs and University teaching hospitals in Nigeria by building renewable and hybrid captive generation plants. These ideas will transform the learning process in Nigerian higher education and teaching hospitals where power supply was epileptic at best, thus, affecting student and faculty safety, research activities and other institutional service delivery processes. Most people would have considered this idea impossible based on the economic realities facing Nigeria at the time and challenges in obtaining agreement between the various stakeholders, some of whom historically have not been keen on sustainable climate resilient infrastructure projects delivered at competitive market costs. However, the integrity,

[13] Mervyn Frost (2016). Universities' role in providing ethical leadership. *University World News*.

passion, and professional ability of the former Managing Director of the Rural Electrification Agency to lay out a clear engineering and financial model helped present a credible selling point for these projects, thereby minimizing the political obstacles that would have killed the project. Damilola and her team focused their messaging on the value proposition for these projects. Specifically, they focused on information that highlights the value/impact the proposed projects as designed will bring to the quality of HEIs and the lives (in particular, the vulnerable population) that will be saved at the selected teaching hospitals in Nigeria. In doing these, she initiated the process of developing an ethical relationship with critical decision-makers in the universities and regulatory bodies where the focus was on values, quality and delivery ownership. Furthermore, she was intentional in identifying senior and mid-level ethical champions within the decision-making levels of these higher education institutions and the National Universities Commission (NUC) as part of the project team. These individuals became the core representatives and promoters of these projects in their institution and were a part of the broader project team at the Rural Electrification Agency (REA).

It is necessary to set out the context for selecting this case study, to buttress the importance of supporting ethical leaders and encouraging them to become champions within and outside their institutions. This project was peculiar because it required the collaborations of six federal ministries, departments and agencies (REA, NUC, Bureau of Public Procurement, Nigeria Electricity Regulatory Commission, Federal Ministry of Education, and the selected higher education institution) with very challenging internal decision-making processes, the National Assembly, Nigeria Infrastructure Advisory Facility (who provided Technical Assistance at the early to mid-stages of the project delivery) and Development Finance Institutions/International Finance institutions like the African Development Bank and World Bank to collaborate in

funding, technical assistance leading to delivery of these projects. Bureau of Public Procurement was the Federal Government Agency that will give the final procurement approval therefore played a critical role at the early stages of the project. It is important to note that some of the government institutions mentioned above historically had difficulties creating an ethical culture, making it difficult for ethical leaders to crack through the established unethical culture without escalating project acceptance and delivery risks.

Ethical leaders should be mindful of these realities when actively seeking to change a culture and focus on small wins which play significant roles in achieving the next milestones for the project delivery process. These small wins were celebrated, and from our interviews, a few intending ethical leaders who before these leaders' emergence and modelled actions felt intimidated by the prevailing unethical culture now mustered the courage to take a stand and become part of the success stories. When asked, "what was the personal motivation for becoming an ethical champion in their institution" most mentioned the affirmation they felt when they came to meetings, especially when stories were shared about how similar unethical process challenges faced in their institution were overcome. They also mentioned that they no longer felt alone in the quest to exemplify ethical leadership in their institutions. Rather, they felt a part of a new team that would drive the restoration of the right culture in their institutions. According to a Harvard Business Review article titled "How to design an ethical organization";

> "Most leaders intuitively recognize the importance of 'tone at the top' for setting ethical standards in an organization. Easily overlooked is 'tone in the middle,' which may be a more significant driver of employees' behaviour. Good leaders produce good followers; but if employees in the middle of the organization are surrounded by coworkers who are lying, cheating, or stealing, they will most likely do the same,

regardless of what their bosses say" (Epley and Kumar, 2019, 7)[14].

According to social rule theory, "most human social activity – in all of its extraordinary variety – is organized and regulated by socially produced and reproduced rules and systems of rules (Burns and Flam, 1987; Giddens, 1984; Harré, 1979, 2). Such rules are not transcendental abstractions. They are embodied in groups and collectivities of people – in their language, customs and codes of conduct, norms, and laws and the social institutions of the modern world, including family, community, market, business enterprises and government agencies" (Burns and Machado 2014, 2)[15]. Some of the institutions involved in the project have developed a culture where unethical behaviour was seen as part of the social rules guiding leadership decisions and institutional thinking, influencing how project delivery quality was measured (assessed) and how milestone invoice was assessment for payment. Creating a methodical intervention process that mitigates this risk requires political courage and a structure for encouraging the emergence of ethical champions. The REA managing director was intentional, as reflected in her interview survey below, to model through decisions and provision of incentives that celebrated successes when ethical behaviour is modelled.

[14] Epley and Kumar (2019). How to design an ethical organization, op. cit., 7.

[15] Burns, T.R., and Machado, N. (2014). Social Rule Systems Theory: Universal Interaction Grammars. CIES e-Working Papers (ISSN 1647-0893). Retrieved on August 20 from https://repositorio.iscte-iul.pt/bitstream/10071/9869/1/CIES-WP175_Burns%26Machado.pdf, 2.

Project Information

REA is the coordinating institution for the energizing Education Programme. According to the program website[16]:

> "The Energizing Education Programme (EEP) is an initiative of the Federal Government of Nigeria (FGN), to provide sustainable and clean power supply to 37 Federal Universities and 7 University Teaching Hospitals across Nigeria. The project includes the provision of an independent power plant, upgrading existing distribution infrastructure, street lighting to improve security within the universities' campuses, as well as the development of a world-class training centre on renewable energy for each university. The project is being implemented by the REA and developed in Phases. Phase 1 will deliver 28.5MW to 9 Federal Universities and 1 University Teaching Hospital, using solar hybrid and/or gas-fired captive power plants. Phase 1 of the EEP will benefit 127,000 students and 28,000 staff of universities, 4,700 staff in Teaching Hospitals (including 819 doctors), power 2,850 streetlights, and result in the decommissioning of hundreds of generators. Phase 1 is fully funded by the FGN, within this phase, there are seven solar hybrid projects currently benefitting from funding from the Green Bond issued by the FGN, while subsequent phases are to be funded by the Nigeria Electrification Project which is an FGN project in partnership with the World Bank and African Development Bank."

[16] Rural Electrification Agency, Energizing Education Project. Website, Nigeria. Retrieved on August 12, 2021, from https://eep.rea.gov.ng/about-eep/

Lessons learned

Ethical leaders in higher education institutions should be intentional in creating a safe space for nurturing emerging ethical leaders. Leaders should encourage an ethical culture by highlighting and celebrating the good things employees are doing. To do this, ethically minded leaders should design an intervention model that identifies major institutional gaps with the most significant ethical issues. The process adopted by Damilola in streamlining and changing the internal procurement process in REA was the critical first step. The ability to adopt an evidence-based model as it relates to strategic decisions provided the organization with the proper foundation for ethical champions to emerge. In addition, it served as a reference point for encouraging other institutional leaders who were going through similar ethical challenges.

The project team meetings provided an opportunity for ethical champions to share, listen and learn about interventions for managing pressures from their colleagues when it comes to critical decisions. The initial engagements with the Vice Chancellors, the regulatory body (NUC), and the supervisory and policy institution (Federal Ministry of Education) helped identify senior-level officials that can provide political cover for ethical champions within their institutions. Some of the emerging ethical leaders agreed that the actions of these Vice Chancellors gave them the courage to address grey areas and in some cases take an unpopular stand when it came to decisions regarding the delivery of the power project in their universities.

An open-ended survey instrument was shared and, in some cases, used as an interview guide with the project team. The response below from Damilola Ogunbiyi captures an analysis of the response from her team members. Excerpts of other stakeholder interviews and survey responses are reflected in the different sections of this chapter.

Ethical Leaders: Lessons learned from a Sustainable Infrastructure Delivery Process

Survey Questions

1. **What was your motivation for spearheading/supporting the Energizing Education Project?**

   My motivation was the strong desire and enthusiasm for sustainable development growth, especially in developing countries such as Nigeria. With the Education and Health sectors arguably being the most critical sectors for socio-economic development in Nigeria, the Energizing Education Programme (EEP) presented an excellent opportunity to apply my specialization in the power sector towards developing these sectors.

   Lack of adequate electricity supply to federal tertiary institutions in Nigeria has posed a major challenge to effective learning and institutional operations. The Energizing Education Programme (EEP), which seeks to provide reliable and sustainable power supply to 37 federal tertiary institutions and seven affiliated university teaching hospitals (through solar hybrid plants), was conceptualized by the Federal Government of Nigeria (FGN). It is currently being implemented by the Rural Electrification Agency (REA) in three phases.

2. **What policies had to be in place to ensure the inception, delivery, and sustainability of the EEP project?**

   The FGN had to put in place a Legal Framework that includes strategies and policies towards tackling existing impediments to a stable power supply and increasing access to electricity through off-grid renewable energy solutions in Nigeria. Furthermore, it has provided guidelines and an enabling environment towards conceptualising and implementing renewable energy programmes such as the EEP.

The legal framework includes; the Electric Power Sector Reform Act (EPSRA), the Economic Recovery and Growth Plan (ERGP), with one of its priorities being to ensure energy sufficiency (power and petroleum products) and improving the energy mix through greater use of renewable energy, the Rural Electrification Strategy and Implementation Plan (RESIP), a subsidiary of the EPSRA which defines the strategy and plan for the delivery of rural electrification across Nigeria and gives REA the mandate to expand access to electricity as rapidly as possible with renewable sources being an essential option.

It is thus important to note that the EEP is strategically aligned with these policies that promote/encourage electricity access through decentralized energy solutions. Regarding the sustainability of the EEP, a sustainability plan has been developed by the REA in collaboration with the EEP beneficiary institutions to ensure the longevity of the solar hybrid power plants and other components of the EEP for at least 15 years.

Although certain policies have been put in place to enable seamless and successful implementation of renewable energy projects, there is still a need to introduce clear fiscal policies on the importation of renewable energy equipment/ products (for example, Solar PV systems) to attract zero import duty especially for programmes within the off-grid electrification strategy.

3. **What ethical hurdles did you overcome before the inception and implementation phases?**

The major challenge faced in the implementation of the EEP phase 1 was financial constraints. However, from an ethical perspective, the EEP is fortunate not to have encountered major hurdles. The relevant governmental Ministries Departments and Agencies (MDA's) that we had to liaise with were very supportive, committed, and instrumental to the success achieved so far. These

include the Federal Executive Council, Bureau of Public Procurement, Nigeria Electricity Regulatory Commission, National Universities Commission and the Federal Ministries of Power, Education and Environment.

4. How did you overcome these challenges?

In overcoming any unethical preconditions and certain preconceived biases towards the concept of the EEP, robust stakeholders' engagement was carried out at the inception of the EEP. This allowed for a centralized and transparent message to be communicated towards ensuring a collective buy-in from the key stakeholders.

As aforementioned, one of the significant challenges faced during implementation of the EEP phase 1 was inadequate funding from the yearly allocated budget to pay the Engineering Procurement and Construction (EPCC)'s. To manage this challenge, I had to be very transparent with the EPCC's as to the reality of things and constantly urge them to continue with construction in good faith that we will eventually pay off completed approved milestones. I will say this approach has paid off as the seven solar projects under phase 1 have been completed, and the EPPC's have been paid more than 80% of the total contract sum.

Leveraging on the progress achieved so far despite inadequate funding, I was able to secure $550 million for the Nigeria Electrification Project from the World Bank and the African Development Bank to power another 15 universities and two teaching hospitals, as well as rural households and micro, small and medium-sized enterprises.

a. Did you have to build relationships with ethically minded people at the relevant MDAs, NASS, NUC, and the leadership of selected Universities to get the projects started and commissioned? (If so, give specific examples on how without necessarily mentioning names or titles).

As aforementioned, the relevant MDA's have been very supportive and have played a positive role in the success achieved so far in implementing the EEP. A solid relationship with the NUC was established, as the beneficiary universities were engaged through the NUC. This was important to ensure buy-in and alignment with the goals and vision of the regulatory body of these universities.

With the NERC being the electricity regulatory body in Nigeria, it was important to build a close and transparent relationship with the institution to ensure that the appropriate permits and licenses for the EEP were obtained so as not to breach any ethical measures in that regard.

In line with the goal of the RESIP as well as the Paris Agreement, which Nigeria is a signatory to, it was necessary to partner with the Federal Ministry of Environment to ensure that the EEP is being implemented in accordance with the goal to implement climate change. This relationship led to the allocation of the Green Bond Fund towards the EEP Phase I Solar projects.

Lastly, with the selected universities, as the critical stakeholders of the EEP, it was highly imperative to build a sustainable relationship that would last from the inception of the EEP till the post-completion phase. As such, it was important to work closely with ethically minded people at the university leadership level, and training was conducted for the staff and students to foster ethical practices towards the sustainability of the EEP projects.

b. Did you have champions within the leadership of the entities mentioned above that you would consider ethical?

Yes. Within the universities' management, in addition to the Vice-Chancellors, designated representatives with knowledge about electrical power systems and renewable energy acted as focal points throughout the implementation of the EEP. In the same light, within the Federal Ministry of Environment, the Office of the Director, Department of Climate Change, served as a focal point as it relates to environmental issues. For NERC, the Director Legal, Licensing and Compliance supported and championed the concept of the EEP from the inception. All were committed to the promotion and the proper implementation of the EEP.

5. **What lessons did you learn through the EEP decision and delivery process that will improve your approach as an ethical leader?**

From an ethical perspective, I will say I have had more validations on why it is important to be ethical than lessons learnt.

One of the things I did during the implementation of the EEP phase 1 was to ensure due process was followed, and all relevant regulatory approvals/ permits were obtained. As implementation of the EEP progressed, one of the questions that the REA was constantly asked was whether all relevant permits and approvals had been obtained. I then realized the importance of not cutting corners but ensuring due process is always followed. If I had not followed due process, it would have had a grave effect on implementation and, ultimately, the success of the EEP.

Another is transparency. I am an advocate of being transparent when implementing any project, and I believe this has helped in the success achieved so far and has also upheld my integrity as a leader. Remaining steadfast in being transparent and always following due process will enable me to stay consistent in being an ethical leader.

Conclusion

Ethical leadership in higher education is important to guide the development of an ethical culture. Greater transparency and oversight of principal officers in the delivery of the institutional mandates is needed to restore credibility in higher education institution leadership. The processes for driving performance and assessing quality should be underpinned by ethical considerations to allow for an incentive framework that supports the emergence of ethical champions in every aspect of the higher education system. Studies listed behaviours that define an ethical leader. The lists include "doing the right thing, being a good and open communicator and receptive listener, sticking to principles and standards, holding followers accountable to standards, and not tolerating ethical lapses" (Trevino et al. 2003,18)[17].

Building trust is also important for the credibility of ethical leaders. Most of our respondents suggested a legalistic approach to building and sustaining an ethical culture in their institutions; however, experience and research have shown that this may not always be effective and sustainable. Conversations with some of the higher education staff revealed that ethical champions, in some cases, experience significant resistance from the individuals with strategic positions in the university, causing them to back down from taking a stand. In some instances, insistence on taking an ethical stand may become a risk to their career growth outlook. The reason for their decision was a feeling that their institution's management team, who have been vocal about the detrimental effects of unethical conduct, did not sufficiently support them when they challenged specific procurement, recruitment, or academic practices. These individuals suggested disciplinary actions as

[17] Trevino, L.K., Brown, M., & Hartman, L.P. (2003, 18). A qualitative investigation of perceived executive ethical leadership: Perceptions from inside and outside the executive suites. *Human Relations*, Vol 56(1), 5-37.

stipulated by the institution policy and rules. In addition to disciplinary action, they suggested that the outcomes of these disciplinary actions be made public as a deterrent for people who are exploring ways to entrench unethical practices in the university. They felt that these leaders did not actively seek out opportunities for improvement and, in so doing, were complacent for entrenching a social rule system that undermines the creation of an ethical culture in their universities. According to Hanson (2009, 3)[18], the damage to reputation and credibility leads to reduced organizational legitimacy—critical to effective institutional governance (Caldwell et al., 2005; Eckel, 2000, 3). Failing to ensure that organizational policies and behaviour are congruent destroys trust and legitimacy (Caldwell et al., 2005, 3). Even more insidious, unethical behaviour can become a part of organizational culture (Caldwell et al., 2005), establishing poor role models and influencing poor behaviour in other members.

Ethical leadership is hard and requires a diverse dimensional approach for seeking out opportunities for improvements and creatively plugging gaps that support lack of accountability which fosters self-benefit as motivations for initiating projects and delivery pathway selection for critical infrastructure projects in any higher education system. Education and ethics are very immensely interdependent almost in all societies. The most important institutions in the world who teaches ethics are home, schools, religious centers, ethical and professionals' organizations, friends and company that a person keeps in routine. (Khan et. al, 2019, 184)[19]. Therefore, the culture in our higher education system should reflect the broader ethical, societal behaviour

[18] Hanson, William. (2009). "Ethical Leadership in Higher Education: Evolution of Institutional Ethics Logic". All Dissertations. 377. https://tigerprints.clemson.edu/all_dissertations/377

[19] Khan, S., N., Shaheen, I., & Malik, W. I. (2020). Factors Triggering Ethical Dilemmas in Teaching Sector of Pakistan. *Global Regional Review*, V(I), 187. Retrieved September 21, 2021.

we expect, especially as it relates to decisions regarding the selection and delivery pathway for critical infrastructures that support sustainable development.

To be intentional about creating an ethical culture within the university community, higher education leaders should consider creating polices that require faculty members to design ethics modules where applicable within their disciplines. Every discipline has ethical concerns that can be presented as case studies and used as multidisciplinary discussion points. The pedagogical approach suggested will be constructivist in nature and with the policy support from institutional leadership mitigate resistance by academics who feel they are not sufficiently prepared to teach ethics related topics. Universities should also incorporate within this policy new faculty professional development that requires completing an ethics in leadership module or any other basic ethics training as a one of the promotion criteria for election into Deanship or head of department roles. This model when adopted and fully implemented will help galvanize a community of ethical champions both at the student, academics and staff levels in the university.

The chapter focused on presenting a case study of an ethical leader who, by her leadership style, encouraged the constitution of a team of ethical champions. The team, among other social support actions, integrated lessons learned from some of the actions taken to mitigate decisions that pose a risk to ethical processes due to the existing social rule system and unethical culture. These examples were more during the procurement process of quality EPC contractors tasked to provide sustainable and clean power supply to 37 Federal Universities and 7 University Teaching Hospitals across Nigeria. The project includes the provision of an independent power plant, upgrading existing distribution infrastructure, street lighting to improve security within the universities' campuses, as well as the development of a world-class training centre on

renewable energy for each university. If ethical leadership is critical in helping higher education institutions succeed through increased productivity, competitive advantage, and effectiveness, why are the core qualities not reflected in every aspect of the decision and delivery process? This question is also pertinent to public service organizations where national infrastructure decisions sometimes reflect a social rule system that undermines an ethical culture. The case study selected for this article provides evidence that an ethical leader can champion critical policy decisions that deliver significant value to the higher education infrastructure growth plan. A significant percentage of these power projects have been commissioned[20] and are providing support to the universities and improving the teaching, learning and research goals of the universities; reduction in noise pollution and carbon emission levels from fuel power generators located in different locations across the university community; it has also significantly reduced security issues that was orchestrated by the poorly lit roads, research laboratories and lecture facilities.

Recommendations

Higher education institutions and other public institutions ethical leaders should be intentional in restoring confidence among stakeholders that they will continue to model ethical leadership in their behaviour and go beyond legalistic measures of holding people accountable to influencing through incentives that encourage the emergence of ethical champions. In other words, for the successful evolution of institutional ethics logic, desired outcomes cannot be forced by bureaucratic agents but enabled by supporting and nurturing influence and mechanisms. All education members can foster some of the mechanisms of ethics at their

[20] Rural Electrification Agency, Nigeria, website: https://eep.rea.gov.ng/

level and beyond, incorporating role modelling, transparency, teaching, conflict resolution and many other constructs (Hanson 2009, p.15)[21]. Some recommendations for emerging ethical leaders are as follows:

1. Ethical leaders should be knowledgeable regarding the social rules that guide the institution they seek to change or strengthen aspects. The adopted decisions and actions should be intentional in setting out pillars for creating an ethical culture.
2. Ethical leaders should model transparency in strategic decisions that can affect their reputation and discourage the emergence of ethical champions. Leaders can reward ethical actions by showing employees the positive impact of their work on others and recognizing their actions in presentations and publications. They can also create opportunities within the organization to behave ethically toward colleagues (Epley and Kumar, 2019, p.10)[22].
3. Ethical leaders can do far more than just model ethical behaviour. The reason is that they are responsible for the decisions of others as well as their own. They can dramatically multiply the amount of good they do by encouraging others to be better (Bazerman, 2020)[23] hence the need to be open-minded about options for recruiting ethical champions. (p.10)
4. Ethical leaders should be intentional in creating a communication strategy that tracks and celebrates ethical conduct in their organization. Aligning messaging around critical decisions can

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[21] Hanson, W., Ethical Leadership in Higher Education: Evolution of Institutional Ethics Logic (2009), op. cit.

[22] Epley and Kumar (2019). How to design an ethical organization, op. cit.

[23] Bazeman B.H. (2020). A new model of ethical leadership. *Harvard Business Review.* Retrieved on August 12, 2021 from https://hbr.org/2020/09/a-new-model-for-ethical-leadership?ab=at_art_art_1x1

reduce obstacles created by individuals with a fixed mindset on maintaining the existing social rule system. This also reduces the perception that leadership is not serious about creating an ethical culture in the university of they pick and choose what to support based on criteria best known to them. It also encourages a whistle blowing policy that will unearth clusters of unethical conduct which would have gone unnoticed by leadership but known by critical stakeholders in the institution.

5. Ethical leaders should create an enabling environment to support the emergence of ethical champions. These actions should be strategically demonstrated starting in units or departments that have shown a willingness to maintaining an unethical culture. Also important is for ethical leaders to show support when emerging ethical champions in these units are challenged by politically connected individuals who play a critical role in the decision process but are not necessarily averse to unethical conduct. This is particularly critical in high ethical risk units or departments such as the personnel unit for recruitments, the procurement unit for contract selection; the bursary for contract payment without a clear mechanism for verification of the quality of milestone specified in the invoice; academic units within the department for plagiarism and sexual harassment issues.
6. Ethical champions should be assigned to high impact positions and supported by the right team to avoid being undermined by individuals who have benefitted from the old order. This sends a message to the institution that exemplary conduct and high performance are grounds for promotion or political appointments to sensitive positions where gatekeepers are needed against unethical conduct. These actions can give the leaders the credibility they need to effect change at the mid-level of their institution. Usually this is the level where the attitude is that we

will wait out the current regime and with a new leader the old social system will flourish again. This is why sustainability of change is challenging.

7. Ethical collaborations should be encouraged, and the structure and supporting internal policies designed to foster learning and growth. The need to set up a social support system, as was demonstrated in the case study where these emerging ethical champions or leaders could share lessons learned and support one another through credible contacts, can be beneficial in creating an ethical culture.
8. Key stakeholder engagement and buy-in at all levels of decision making to foster transparency should be encouraged within HEIs as demonstrated in the case study. Research has shown that this is beneficial in setting the tone for ethical considerations from the onset and minimizes confusion that can arise from mixed messaging perpetrated by individuals who have benefitted from the old order.

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2

EDUCATIONAL SOCIAL RESPONSIBILITY IN THE PRACTICE

NEW PATHWAYS IN ARGENTINA'S TRAINING OF PRINCIPALS

Julio C. Durand, Carlos Pujadas and Sebastián Laguto

Keywords

ESD; SDG; sustainability; social responsibility; ethics; higher education.

Abstract

Promoting Education for Sustainable Development (ESD) requires institutional engagement of the whole school community and especially of the Principals and school heads. Educational Social Responsibility (ESR) constitutes a high-impact approach for the management of educational institutions aligned with ESD vision.

Resolution 72/222 (2017) of the United Nations General Assembly recognized that ESD is an integral element of Sustainable Development Goal 4 (SDG 4) and decisively enables the achievement of all other

SDGs (UNESCO, Framework for the implementation of ESD after 2019, n.1).

In the training of directors of educational institutions in Argentina and Latin America there is a gap in relation to ESD. We present two initiatives of higher education institutions that seek to fill this vacancy: a postgraduate degree for principals of educational institutions that includes the ESR approach and a joint award between a State and a private university that recognizes best practices in schools.

We analyzed the project proposals presented by principals and school heads attending de ESR seminar and asked them to reflect on the real impact and improvement opportunities in institutional management. We also present the impact of the ESR award in the community and the contribution to improve the knowledge of SDG*.

Introduction

Higher education institutions have a relevant role in the formation of leaders in all of society's domains. We can highlight the relationship of the university and higher education in general with the preparation of

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principals and authorities of schools, colleges, and educational institutions at all levels.

An ethical leadership of these institutions has the potential to expand the impact and reach a large part of society and in this way reinforce behaviours compatible with a sustainable vision of human progress as proposed by the 2030 Sustainable Development Goals (SDG).

In this work we address the training of school leaders and the impact of the approach to Educational Social Responsibility (ESR) that is part of the *curriculum* of a master's degree program, and the award given by two universities to stimulate this perspective of educational management.

We briefly analyse the main concepts involved: sustainable development (SD), education for sustainable development (ESD) and its contribution to the sustainable development goals (SDG), priority areas of action for the implementation of ESD, and a proposal guide to elaborate the ESD plan of each institution.

It is also pertinent in our study to mention the contributions regarding University Social Responsibility (USR) and the current state of ESR as mentioned previously.

As has already been analysed in another work[24] we note that SD in the educational field is mainly about caring for the environment. The task with respect to the other two components of SD, economic development, and human and social development, is on the other hand incipient. The same is true of ESD and its implementation in educational institutions.

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[24] Pujadas, C., Laguto, S., Lescano**,** M. (2021). *Elaboración de un plan de responsabilidad social educativa según el modelo de la UNESCO (enfoque institucional). Experiencia del colegio IMES.* Ponencia presentada en el Congreso SIRSO, La Plata, Argentina.

Sustainable Development and Sustainability

The notion of sustainable development was enunciated in 1987 by the Brundtland Commission as "development that meets present needs without compromising the ability of future generations to meet their own needs"[25] .

Since then, the notion of sustainable development has been challenged and confronted repeatedly arguing that economic growth cannot be sustainable because it is accompanied by unlimited exploitation of natural resources and the deterioration of the environment[26]. Some authors such as Redclift[27] and Brown[28] mention that SD would be an oxymoron that would hide the inevitable conflict between humanity and natural systems. Dasgupta[29] argues that the very idea of development is oriented against nature.

However, these are criticisms that have not been sufficiently substantiated at the beginning of the concept, although they have

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[25] United Nations Organization. (1987). World Commission on Environment and Development. *Our common future*. https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf

[26] Repetto, R.; Magrath, W.; Wells, M.; Beer, C. & Rossini, F. (1989). *Wasting assets: natural resources in the national income accounts*. Washington (DC): World Resources Institute; Pearce D. W. & Atkinson, G. 1993. Capital theory and the measurement of sustainable development: an indicator of weak sustainability. *Ecologic Economy*, 8:103–108; Hamilton, K. & Clemens, M. (1999). Genuine savings rates in development countries. *World Bank Economic Review*, *13*: 333–356.

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[28] Brown, J. H. (2015). The oxymoron of sustainable development. *BioScience*, 20:1–2.

[29] Dasgupta, P. (2013). The nature of economic development and the economic development of nature. *Cambridge Working Papers in Economics*. CWPE 1349. Cambridge: University of Cambridge.

deepened the analysis of the various SDGs and the increase in academic production on them in various disciplines and sciences.

The SDGs are much more ambitious than their predecessors, the Millennium Development Goals, since in addition to aiming at eradicating extreme poverty, they seek socio-economic inclusion and ecological sustainability. The seventeen SDGs were defined by the United Nations to be accomplished in the period or 2015-2030, involving in achieving them both the developed and the underdeveloped countries[30].

The International Council of Sciences reviewed the SDGs and remarked that the framework of the SDGs could be internally inconsistent and therefore 'unsustainable' if the interrelations among different dimensions were ignored, or the complex dynamics and conflicts between proposed goals were overlooked[31]. However, as Spaiser and colleagues state, no empirical evidence is provided on this alleged contradiction[32]. These authors attempt to make their contribution on the inconsistency of the SDGs through the data analysis approach to the goals indicators.

Studies proposed with the data analysis perspective are often criticized for the lack of a sufficiently deep theoretical foundation. However, it can be said that the same criticism applies to the

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[30] UN Department of Economic and Social Affairs, 2015.

[31] ICS & ISSC. (2015). International Council for Science and International Social Science Council and International Social Science Council. *Report: review of targets for the sustainable development goals: the science perspective.* Paris. Available from: https://council.science/publications/review-of-targets-for-the-sustainable-development-goals-the-science-perspective-2015/

[32] Spaiser, V., Ranganathan, S., Swain, R. B., & Sumpter, D. J. T. (2016). *The sustainable development oxymoron: quantifying and modelling the incompatibility of sustainable development goals*. https://doi.org/10.1080/13504509.2016.1235624

general framework of the SDGs[33] . Furthermore, there is no agreement on a comprehensive theory of sustainable development, and opposing theoretical approaches coexist, which makes the framework with which the SDGs should be studied not clear[34].

The SDGs offer a list of goals without a clear priority and without a theory on how they should be achieved. Two of them, numbers 8 (economic growth and productive employment) and 9 (infrastructure, inclusive and sustainable industrialization and innovation) are in fact means to achieve development rather than goals in themselves. They were included as a reaction to the criticism that the Millennium Goals received for lacking a theory and grounded proposal on how to achieve development in the real world[35].

It should be borne in mind that the SDGs involve a long-term process with potentially unforeseen changes such as those that are occurring with increasing frequency with new technologies, and the difficulty of designing scenarios in an environment of high uncertainty. That is why it is pertinent to deepen the study of sustainability and strengthen the foundations of concrete actions and plans[36].

Vogt and Weber systematically approach sustainability theory through a seven dimension analysis and use seven fallacies as

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[33] Szirmai, A. E. (2015). How useful are global development goals? United Nations University. Available from: http://unu.edu/publications/articles/reflection-on-global-goals.html; ICS, 2015.

[34] Spaiser et al, *op. cit.*; Hopwood, B., Mellor, M. & O'Brien, G. (2005). Sustainable development: mapping different approaches. *Sustainable Development*, 13: 38–52.

[35] Szirmai, 2015, *op. cit.*

[36] Swain, R. B. (2018). A Critical Analysis of the Sustainable Development Goals. In *Handbook of Sustainability Science and Research. World Sustainability Series* (pp. 341–355). Springer.

triggers that challenge its validity[37]: 1) ecological dimension, 2) political, 3) ethical, 4) socio-economic, 5) democratic, 6) cultural, and 7) theological. We will review their comments briefly.

The ecological dimension has been the most studied and implies a reflection on the conditions and consequences of human activities. Especially relevant is the notion of 'property' and its consequences when applied to natural resources, and this on the planet itself -considering, for example, the status of the Antarctic continent- as in relation to outer space.

The political dimension points to the core of the United Nations message on SD: the interdependence between ecological, socio-economic, and human factors. The approach of the 'three pillars' understood as the 'sum' of the three types of factors is questioned, since it should be approached in the light of their permanent interaction and interdependence[38].

The ethical dimension is especially relevant to us in this work. It involves the notions of global and intergenerational responsibility that are at the core of the concept of SD itself. It interacts in turn with the notion of freedom that is central to any ethical perspective, and the capabilities approach of Amartya Sen[39] may be useful in this regard.

The socioeconomic dimension should 'operationalize' sustainability since it leads the discussion to the preservation of natural resources. It faces a 'soft' and a 'strong' approach to sustainability. The soft interpretation allows the substitution of natural resources for an improvement in social, economic, and ecological conditions. The

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[37] Vogt, M., & Weber, C. (2019). Current challenges to the concept of sustainability. *Global Sustainability*, *2*. https://doi.org/10.1017/sus.2019.1

[38] Vallaeys, François. (2020). Why corporate social responsibility is not yet transformative? A philosophical clarification. *Andamios*, *17*(42), 309-333. https://doi.org/10.29092/uacm.v17i42.745

[39] Sen, A. (1999). *Development as Freedom***.** New York: Knopf.

'strong' view maintains that the exploitation of natural resources cannot be compensated by benefits in other dimensions. Therefore, it openly questions the very approach of the three pillars.

The 'strong' model of sustainability implies a methodological deficiency since it considers 'resources' as a pre-social reality, when in real life something can be considered a resource when it is proven that it has a certain usefulness and value. That something can be used and consumed implies a cultural and technological dimension, giving rise to the innovation and advances that have been produced throughout history. If the value of innovation is not admitted, sustainability degenerates into pure restriction[40] .

The democratic dimension connects with politics and ethics. Sustainability implies the participation and commitment of civil society, limiting the exclusive power of the authorities through mechanisms of division and balance between multiple actors, the promotion of initiatives and sensitivity towards values from different groups.

For our work, the dimension of a 'culture of sustainability' proposed by Vogt and Weber[41] is particularly relevant because of its close relationship to education. A profound change in lifestyles is necessary and a new wealth model. It is not a scheme to save or spare resources. Sustainability implies a different ethical orientation that allows the current paradigm of progress and unlimited growth to be replaced by the guiding principle of development, closer to the notions of cycles and rhythms that are embedded in nature.

A culture of sustainability recognizes the protection of nature as a cultural, educational task. It integrates the quality of the environment as a fundamental part of the definition of wealth at all levels. It involves the rediscovery of the ethics of moderation and the temperate life. It is

[40] Vogt & Weber, 2019, *op. cit.*

[41] *Ibid.*

not about ignoring the value and attractiveness of wealth but to find an intelligent style of consumption[42].

A misconception about sustainable development is that the qualitative standards and definitions of a good life are considered as a private matter and therefore not reached by public discourse or science. Promises of a win-win outcome to separate economic growth from resource consumption have proven ineffective. Sustainability will require the population to be thriftier and more efficient at the same time. Technological innovations must then be articulated with optimization in organizations and changes in personal attitudes to produce a cultural change. A deeper approach is needed that overcomes utilitarian and superficial 'fashionable' practices, such as a bit of 'greenwashing' ... "The CSR management instruments, despite pretending to face the social and environmental impacts of organizations (ISO 26000), are oriented towards the sole definition of *blameless organizational behavior:* the organization that treats well its collaborators, its suppliers, nature, etc .; but they do not address the issue of *the sustainable economic system:* the organizations that come together to transform the production and consumption system"[43].

The theological dimension proves pertinent to substantiate sustainability in depth, as has been recognized in the global attention received by Pope Francis' encyclical *Laudato'si*. There is a wide field for theological ethics in the careful look at the creation and appreciation of the Earth as the 'common home'. It helps to moderate the overconfidence in human capacity and at the same time moderates the glances of postmodern pessimism in its anti-rationalist reaction[44].

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[42] Stehr, N. (2006). The Moralization of the Markets (1st ed.). Routledge. https://doi.org/10.4324/9781315133249

[43] Vallaeys, 2020, *op. cit.*

[44] Vogt & Weber, 2019, *op. cit.*

Ethics and Education for Sustainable Development

The analysis of the concept of sustainable development, as well as the theoretical foundation of sustainability, show us its multiple relationships with ethics, cultural change and education. analysis of the sustainable development concept of the theoretical foundation of sustainability put us ahead multiple relationships with ethics, cultural change, and education. There is a need for a profound transformation of society to avoid worsening the harmful consequences that are currently observed in climate change and global warming. It will not be achieved without systematically confronting the predominant individualistic approach: "which we can designate by the oxymoron of a *solitary practiced social responsibility*. It is unlikely that in this way the hope of transformation of the economic field towards the sustainability that humanity needs can be satisfied"[45].

At the United Nations World Summit in Rio de Janeiro in 1992, education for sustainable development was highlighted as a key element on the global political agenda. With the proclamation of the World Decade in Education for Sustainable Development 2005-2014, this agenda became more operational[46]. The Global Action Program was then launched with five key elements to promote the 'institutional' approach to ESD, aiming at strengthening educators as agents of change and facilitators of learning[47].

The purpose of ESD goes beyond understanding sustainability issues. It really sets out to find solutions to these problems[48].

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[45] Vallaeys, 2020, *op. cit.*p. 315.

[46] UNESCO, 2014b.

[47] UNESCO, 2014a.

[48] Barth, M., & Michelsen, G. (2013). Learning for change: An educational contribution to sustainability science. *Sustainability Science*, 8(1), 103-119. doi: 10.1007/s11625-012-0181-5; Wals, A. E. J., & Jickling, B. (2002). Sustainability in higher education: From double- think and newspeak to critical

UNESCO has developed the concept of Education for Sustainable Development (ESD), defined as "what allows each human being to acquire the knowledge, skills, attitudes and values necessary to forge a sustainable future"[49].

The learning outcomes and key competencies that students should acquire in terms of ESD are described in the extensive review by Wiek, Withycombe and Redman[50] as systems thinking, anticipatory, normative, strategic, and interpersonal skills.

UNESCO finalized the list of competencies by identifying eight groups in 2017[51]. Then, and with the aim of actively promoting change, it established three areas as especially important learning objectives: cognitive (knowledge), socio-emotional (interpersonal and motivational), and behavioural (action and proactivity)[52].

For ESD are especially valuable approaches to learning that propose an active or experiential design and, where cognition is combined with perception, behaviour, and experience, so that favour personal capacity for critical reflection in the social context, and therefore facilitating responsible behaviour and reflective practice[53].

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thinking and meaningful learning. *Higher Education Policy*, 15(2), 121-131. https://doi.org/10.1016/S0952-8733(02)00003-X

[49] UNESCO, 2017.

[50] Wiek, A., Withycombe, L., & Redman, C. L. (2011). Key competencies in sustainability: A reference framework for academic program development. *Sustainability Science*, 6(2), 203-218. https:doi.org/10.1007/s11625-011-0132-6

[51] UNESCO, 2017.

[52] UNESCO, 2018.

[53] Clark, W. C., & Dickson, N. M. (2003). Sustainability science: The emerging research program. *Proceedings of the National Academy of Sciences*, 100(14), 8059; Pipere, A. (2019). Journal of Teacher Education for Sustainability after the UN Decade of Education for Sustainable Development: Exploring for the future. *Journal of Teacher Education for Sustainability*, 21(1), 5-34.

The UNESCO[54] pointed out that the educational process of the EDS should include: a) situational relevance (real - life problems found and connected with students); b) group commitment and with the teacher (together rather than proposed from above); c) that lead to change; d) that allow the formation of learning and action networks; d) with change projects at the institutional level led by ethical reasons and values that lead to contributing to greater sustainability in specific situations.

A recent bibliographic review[55] concluded that ESD, however, is not yet presented with the capacity to promote behavioural changes and greater awareness of the need for these changes. In 2015, Fischer and her colleagues[56] argued that a holistic and comprehensive approach to education, which addresses physical, intellectual, and emotional reality, was necessary to drive ESD. This should also be carried out at the level of the whole institution or the totality of the education system.

UNESCO[57] recommends that projects have an 'institutional' approach, embracing the whole institution and not just some part of it, with a strong ethical commitment. In Algurén's review[58], none of the 16 works identified in the selection process could be framed in this view. The institutional scope seems indispensable to sustain individual efforts in the arduous and complex phases of behaviour change

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[54] UNESCO, 2018.

[55] Algurén, B. (2021). How to Bring About Change: A Literature Review About Education and Learning Activities for Sustainable Development. *Discourse and Communication for Sustainable Education*, vol. 12, no. 1, pp. 5-21. https://doi.org/10.2478/dcse-2021-0002

[56] Fischer, D., Aubrecht, E. L., Brück, M., Ditges, L., Gathen, L., Jahns, M. & Wellmann, C. (2015). UN Global Action Programme and Education for Sustainable Development: A critical appraisal of the evidence base. *Discourse and Communication for Sustainable Education*, 6(1), 5-20.

[57] UNESCO, 2014b.

[58] Algurén, 2021, *op. cit*.

processes. Without this scaffolding and institutional support, it seems difficult to achieve behavioural changes that are persistent over time.

Educating for SD means incorporating the fundamental themes of SD into teaching and learning, for example climate change, disaster risk reduction, biodiversity, poverty reduction and sustainable consumption. Likewise, ESD requires participatory teaching and learning methods that motivate students and give them autonomy, in order to change their behaviour and facilitate the adoption of measures in favour of SD[59].

In 2002, the UN decided to entrust UNESCO with promoting ESD, as the most suitable means for the new generations to be able to decide and act responsibly in pursuit of a fairer society for all, economically viable, and at the same time preserving the environmental integrity of the planet.

From 2005 to 2014 the UN approved the Decade of ESD. In the Rio + 20 outcome document *The Future We Want*, it is stated: "We resolve to promote education for sustainable development and integrate sustainable development more actively into education beyond the Decade of the United Nations of Education for Development"[60].

The results were mixed, as some first world countries joined the initiative with conviction, while in others, such as Argentina, no relevant impact was observed. The main documents for the promotion of that Decade were the Global Action Program, with a Road Map[61] to put it into practice.

As we mentioned previously, in September 2015 the UN General Assembly approved the 17 new Sustainable Development Goals (SDGs), which include ESD in its post-2015 Agenda.

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[59] UNESCO, 2014b.

[60] UN 2012, n. 233.

[61] UNESCO, 2014a.

The UNESCO has been established as a leading institution of EDS, across multiple international meetings, documents, and resources. In 2014 the UNESCO World Conference on ESD was held in Aichi-Nagoya, Japan. The evaluation of the ESD Decade (2005-2014) was presented and culminated in the *Aichi-Nagoya Declaration on Education for Sustainable Development.*

In 2015 the Declaration of Incheon is known, after the *World Educational Forum* held in that city of Korea. The purpose of the meeting was to evaluate the 15 years in EFA (Education *for All*, since 2000) and the MDG (Millennium Development Goals) proposed for Education. The final document is entitled: *Education 2030: Towards inclusive and equitable quality education and lifelong learning for all.*

In point 5 of the Preamble it says:

Our vision is to transform lives through education, recognizing the important role that education plays as a main driver of development and for the achievement of the other proposed SDGs. We urgently commit to a unique and renewed education agenda that is comprehensive, ambitious, and demanding, leaving no one behind. This new vision is fully captured in the proposed SDG 4 'Ensure inclusive, equitable and quality education and promote lifelong learning opportunities for all' and its corresponding targets.

And in point 9:

Furthermore, [quality education] fosters the development of skills, values and attitudes that enable citizens to lead healthy and fulfilling lives, make informed decisions and respond to local and global challenges through education for the sustainable development (ESD) and global citizenship education (GCE). In this regard, we strongly support the implementation of the Global Action Program on ESD presented at the UNESCO World Conference on ESD held in Aichi-Nagoya in 2014.

At the UNESCO General Assembly on November 4, 2015, 184 countries adopted the *Education 2030 Framework for Action. Towards inclusive and equitable quality education and lifelong learning for all*, which contains the already referred Declaration Incheon and *Framework for Action.*

The UNESCO General Conference in November 2019 approved a new global framework for Education for Sustainable Development (ESD by 2030) to be implemented in the 2020-2030 decade.

The global framework for the implementation of ESD succeeds the Global Action Program on ESD (GAP, 2015-2019). The global ESD framework for 2030[62] aims to build a fairer and more sustainable world by strengthening ESD and also contributing to the achievement of the 17 Sustainable Development Goals (SDGs). The framework will focus on integrating ESD and the 17 SDGs into policies, learning contexts, teacher training, youth empowerment and mobilization, and local tasks.

The new framework takes advantage of the prominence given to the role of ESD by UN General Assembly Resolution 72/222, which states that ESD is an integral element of SDG 4 on education and is also a Decisive enabling factor to achieve the other SDGs. The global framework will seek to reorient teaching and learning in order to contribute to SD and reinforce both aspects in all activities that promote SD.

At the 2019 United Nations General Assembly, the new ESD framework for 2030 was presented as part of the "*Implementation of ESD in the framework of the 2030 Agenda for Sustainable Development report*, which was discussed in the Second Committee and accepted by the members of this body "[63].

The ESD framework for 2030 was presented at the World ESD Conference, which was held in Berlin, May 17-19, 2021. According to

[62] UNESCO, 2019.

[63] UNESCO, 2019.

UNESCO, the Conference will raise awareness of the challenges that the world has realized in the 17 SDG, and will highlight the crucial role of ESD as a key enabler for the successful achievement of all SDGs, and will create momentum to strengthen ESD in policy and practice.

In one of the most recent documents[64] the main concepts of ESD are reaffirmed, placing more emphasis on the contribution of ESD to the 17 SDGs, in particular target 4.7. The transversal competences promoted by ESD are described, in the cognitive, socio-emotional and behavioural dimensions of learning, which are relevant to all spheres of quality education. Places a "special emphasis on that the skills related to empathy, solidarity and action can promote the advancement of the ODS 4 building a process in which the education contributes not only to individual successes, but also to the future collective survival and the prosperity of the world community"[65].

The observation in the document is very interesting, in the sense that ESD can help the global education agenda stop focusing exclusively on access and quality, "and move to place greater emphasis on the content of learning and in its contribution to the sustainability of people and the planet. In this way, ESD connects SDG 4 with all the other SDGs"[66].

Priorities for the Implementation of ESD According to UNESCO

Starting in 2014, five priority action areas were set for the implementation of ESD, which have been maintained and reinforced over the years:

[64] UNESCO 2020, p. 14.
[65] UNESCO, 2020, p. 14.
[66] UNESCO, 2020, p. 14.

a) Priority Action Area 1: Policy Advocacy: Integrate ESD into education and sustainable development policies to create an enabling environment for ESD and trigger systemic change.

b) Priority area of action 2: Transform learning and training settings: Integrate the principles of sustainability in education and training environments.

c) Priority Action Area 3: Build capacities among educators and trainers to deliver ESD more effectively.

d) Priority Action Area 4: Empower and mobilize young people on ESD.

e) Priority Action Area 5: Accelerate sustainable solutions at the local level, expanding ESD programs.[67]

In our work we have focused on priority 2 and on priority 3 because they are closely related. We analyse them below following the outline of the Roadmap for ESD 2020[68].

Priority 2 is that educational institutions are transformed to be a living example of the exercise of sustainability of an organization. The school must become a laboratory in which the criteria that students are intended to learn are tested. Theoretical learning is not so important, but life itself at school should be SD learning.

It is an extremely realistic approach, because UNESCO warns that it is counterproductive for certain concepts to be taught in the classroom and in books and then not lived consistently in practice: "Students quickly notice when there are discrepancies between what is taught and what happens around them. For example, if they study about energy conservation, but the school does not implement measures to conserve it, the students will realize it"[69].

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[67] UNESCO, 2014.

[68] UNESCO, 2020.

[69] UNESCO, 2012, p. 48.

The challenge posed by this priority 2 is very clear: "The comprehensive institutional approach to ESD requires learning environments in which learners learn what they live and live what they learn." And that is why it is essential that "the institution as a whole adheres to the principles of sustainable development, so that the content of learning and its pedagogies are reinforced by the way in which the facilities are managed, and decisions are made at the intramural"[70].

In the N. 6. e) of the Berlin Declaration on ESD repeats and reinforces the same concepts regarding the comprehensive institutional approach to ESD[71].

Actors

The ESD approach is not limited to recognizing only students, teachers and administrative staff as stakeholders, as is traditionally thought in school terms.

In all types of organisations, it is widely accepted that there are numerous stakeholders, the different communities and groups that affect or are affected by the institution[72], and in consequence that all of them must be considered in all decisions.

In terms of ESD, therefore, all those responsible for the formulation of education policies, the principals of educational institutions, professors, students, and administrative personnel are typical actors. But so are "local community leaders, community families, as well as non-governmental and private sector agents working for sustainability"[73].

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[70] UNESCO, 2020, p. 28.

[71] UNESCO, 2021.

[72] Edward Freeman, R. (1984). *Strategic Management: A Stakeholder Approach*. University of Indiana. Pitman Series. (2010) University of Cambridge Press. ; Donaldson, T., y Preston, L. E. (1995). The stakeholder theory of the corporations: concepts, evidence, and implications. *Academy of Management Review*, *20*(1), 65-91. https://doi.org/10.5465/amr.1995.9503271992

[73] UNESCO 2020, p. 28.

Responsibility and ethics: ESR

If ESD aspires to transform individual and social behaviours, it will be necessary to endow it with a strong ethical commitment that allows developing the sense of responsibility of each person and of all institutions and organizations in the community.

The proposal of Vogt and Weber is very suggestive when it talks about the need for a 'social grammar of responsibility'[74]. Their proposition is that the legal system, international institutions, and moral sense are insufficiently prepared to assign responsibilities in the treatment of ecological collective goods and other sociocultural values**.**

University social responsibility

Educational institutions, including universities, feel overstressed as they are assigned responsibilities for the future, democracy, well-being of the world, and so on. As Durand noted:

> "although probably nobody intends to behave irresponsibly, we often follow the logic of not thinking or reflecting on personal comportment, and some people seem to consider that they do not have to account for the consequences and impact of their decisions or the institutional actions"[75].

Although absolute control cannot and should not be promoted, the discourse of responsibility must encourage one to avoid, prevent or counteract irresponsible behaviour in the most effective way possible, no matter how widespread they may be. It cannot be limited to the individualistic approach to ethics as appears to be the dominant approach in CSR according to Vallaeys:

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[74] Vogt, M., Weber, C. (2020). The role of universities in a sustainable society. Why value-free research is neither possible nor desirable. *Sustainability* (Switzerland), 12(7). https://doi.org/10.3390/su12072811

[75] Durand, J. C. (2016). Prólogo. https://www.teseopress.com/gestión educativaresponsable

> "The corporate social responsibility fails to fulfil its purpose of management of social and environmental impacts because it is practiced paradoxically in an isolate way in each organization. Frequently is being confused with a moral responsibility within a paradigm of ethical individualism. Thus, it becomes ineffective against systemic impacts intended to confront, because these would require to assume a shared responsibility through broad partnerships inter and trans organizational, a real socialization of responsibility"[76].

The systematic ethical reflection on responsibility has an impact on the teaching, research, and service that the university promotes[77]. It is not simply about formal issues, ethics committees, conflict of interest codes, and the like. Ethics is neither the mere optimization of consequences nor the deductive application of norms and principles. It is more than a benevolent attitude or altruistic disposition of service to others. Ethics must address the challenges of living in society and give space to the notion of the common good[78].The 'responsive' dimension is expressed in the very notion of responsibility. It involves attentive care when relating to others and dealing with technical and social issues.

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[76] Vallaeys, 2020, *op. cit.*, p. 310.

[77] Vallaeys, François. (2016). Introducción a la responsabilidad social universitaria RSU. En *Ediciones Universidad Simón Bolívar*. Ediciones Universidad Simón Bolívar. https://bonga.unisimon.edu.co/handle/20.500.12442/3544#.YErg-VHUTbs.mendeley

[78] Durand, J. C. & Pujadas, C. (2004a). "Self-Assessment of Governance Teams in an Argentinean Private University: Adapting to Difficult Times". *TEAM* (*Tertiary Education and Management*), 2004, 10(1): 27-44. DOI: https://doi.org/10.1080/13583883.2004.9967115; Sandel, M. J. (2020). *The Tyranny of Merit. What's Become of the Common Good?* New York: Farrar, Straus and Giroux; Hoevel, C. (2021). *La industria académica. La universidad bajo el imperio de la tecnocracia global.* Buenos Aires: Teseo.

Responsibility as a virtue requires conscience and wilfulness. It is a basic attitude that can be reinforced from the outside to a limited extent. It manifests itself in the willingness to account for one's actions, before oneself and others. At an institutional level, it is not enough to designate a 'manager of corporate responsibility'. All members of that organization must develop it personally and contribute to its operational and coherent manifestation in the corresponding actions[79]. But also, as we pointed out before, there is the challenge of extending responsibility to its social dimension:

> "social responsibility curiously and paradoxically suffers from a 'desocialization': although it concerns organizations, collective entities par excellence, it is conceived as the responsibility of *each* organization *vis*-à-*vis* society and not as a shared responsibility *among* social actors"[80].

The challenge is to define a new version of humanism that is aware of the ecological interconnection and the tension between progress and the risks that affect the environment. For this it is necessary to promote a deeper and bolder inter and transdisciplinary approach. It has to be pluralistic and intercultural, but without lacking commitment and obligation, that is, avoiding comfortable neutrality. "Universities have to become 'transformation laboratories' in the search for a culture of sustainability and responsibility"[81].

For a long time, there has been a confrontation about the future of the university, and indirectly of society, which does not finish finding an overcoming approach. It can remain in technical or managerial

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[79] Arias Valle, M. B. (2021). *La Responsabilidad Social Universitaria analizada desde la misión institucional*. Unpublished Doctoral Dissertation, Universitat Internacional de Catalunya, Barcelona.

[80] Vallaeys, 2020, *op. cit*., p. 313.

[81] Vogt & Weber, 2020, *op. cit*.

solutions[82] or challenge the adaptability of governments and university actors themselves[83].

Regarding the institutional approach that we maintain, the entire university fulfils a role of model for its members, students, and academic staff. It should seek to establish daily practices that consolidate skills and competencies, achieving a comprehensive and in-depth education[84]. Critical thinking must first be applied within the University itself, even if it is uncomfortable and challenging for management.

The sustainability debate has been blurred many times by trade-offs. It ends up causing disbelief and cynicism, when seeing the distance between what is declared and what is really lived. The loss of prestige of the political classes also affects university institutions, especially the largest and state-run ones, which fail in the formation of ethical citizens committed to the common good[85].

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[82] Etzkowitz, H., Webster, A., Gebhardt, C., & Terra, B. R. C. (2000). The future of the university and the university of the future: Evolution of ivory tower to entrepreneurial paradigm. *Research Policy*, *29*(2), 313-330. https://doi.org/10.1016/S0048-7333(99)00069-4

[83] Gaete Quezada, R. (2011). La responsabilidad social universitaria como desafío para la gestión estratégica de la Educación Superior: El caso de España. *Revista de Educacion*, *355*, 109-133. https://dialnet.unirioja.es/servlet/articulo?codigo=3638879

[84] Durand, J. C. & Pujadas, C. (2007). "La Universidad socialmente responsable ante la lógica del mercado". En Páez, Tomás y Antonio Lucas Marín (Eds.), *Ética y Responsabilidad Social en las Organizaciones*. Caracas: UCV-RVSO; Rieckmann, M. (2018). Learning to transform the world. Key competencies in Education for Sustainable Development. In Leicht, A., Heiss, J., Byun, W.J., (Eds.) *Issues and Trends in Education for Sustainable Development*. UNESCO: Paris, France. Pp. 39–59.

[85] Durand, J. C. & Pujadas, C. (2004b). "La Universidad y los Valores de Nuestra Clase Dirigente". *Escenarios para un nuevo contrato social*, Mayo 2004, 2(7): pp. 31-35.; Durand, J. C. (2020). Argentina: The University contribution to Society's Ethical Leadership en Deivit Montealegre y María

A few brief considerations on ESD in Latin America and Argentina. Although there is production around environmental education, the presence of academic publications on sustainability is less abundant.

We can point to the recent study by Zúñiga Sánchez[86] that is relevant to us due to its treatment of sustainability in the field of universities in Mexico. We also highlight the review of a Spanish group[87].

We observe a critical vision of ESD from pedagogical perspectives. However, the development of the 'institutional' approach is not observed. The limitations refer to the scarce reflective effort on the part of educators and researchers[88].

For the purpose of this contribution, we will not delve into the current state of ESD in our region. Suffice it to note the growing theoretical interest and the scarcity of applied and practical approaches.

The implementation of the SDGs cannot be achieved without a change in the dominant culture and values of society. These changes are not produced by decisions of the authorities, but must be promoted in the complex interaction between the modification of values, the

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Eugenia Barroso (Eds.). *Ethics in Higher Education, a Transversal Dimension: Challenges for Latin America. Ética en educación superior, una dimensión transversal: Desafíos para América Latina.* Geneva: Globethics.

[86] Zúñiga Sánchez, O. (2021). El reto de las universidades públicas de México para incorporar una educación pertinente acorde con la sustentabilidad. *RIDE Revista Iberoamericana Para La Investigación y El Desarrollo Educativo*, *11*(22). https://doi.org/10.23913/ride.v11i22.952

[87] Gonzalo Muñoz, V., Sobrino Callejo, M. R., Laura Benítez Sastre, L. B. S., & Coronado Marín, A. (2017). Revisión sistemática sobre competencias en desarrollo sostenible en educación superior. *Revista Iberoamericana de Educación*, *73*. https://doi.org/10.35362/rie730289

[88] Alonso-Sainz, T. (2021). Educación para el desarrollo sostenible: una visión crítica desde la Pedagogía. *Revista Complutense de Educación*, *32*(2). https://doi.org/10.5209/rced.68338

institutional design of organization' conditions and the transformation of practices that mobilize the pioneers of change.

In one way or another, the need for 'leadership' in multiple areas is being suggested. As far as we are concerned in this article, we focus our eyes on pedagogical and institutional leadership in all types of educational organizations.

A key role is played by universities in promoting a new conception of progress. Instead of occupying a marginal place in society, they can promote a true revolution in favour of sustainability. They should do so from their own internal transformation and a responsibility that is not presented as moralizing but supported by experience, practice and scientific evidence as is proper to its original nature[89].

Practical Guide to an ESD Plan

Pujadas and his colleagues have been working for more than a decade on a practical guide to produce the Plan of EDS or Educational Social Responsibility (ESR) in all kinds of educational institutions.

The UNESCO guidelines that we have reviewed contain the clear recommendation that schools develop a sustainability plan, or ESD Plan, which they also call the "comprehensive institutional approach to ESD". The objectives and the actors that must intervene are defined, and the way to specify them remains open.

The educational institutions should make their contribution, based on its mission, to the sustainability of the planet. Since 2011, there are

[89] Larrán Jorge, Manuel, y Andrades Peña, F. J. (2017). Analysing the literature on university social responsibility: A review of selected higher education journals. *Higher Education Quarterly*, *71*(4), 302-319. https://doi.org/10.1111/hequ.12122; Martí-Noguera, J. J., Licandro, Ó., y Gaete-Quezada, R. (2018). The social responsibility of higher education as a common good. Concept and challenges. *Revista de la Educacion Superior*, *47*(186), 1-22. https://doi.org/10.36857/resu.2018.186.353

educational institutions in Argentina that make their sustainability or social responsibility plans, following a 6-step guide[90], perfectly adapted to the guidelines of Priority 2 of UNESCO.

Below we summarize the six steps of the *Guide to make an educational social responsibility plan.*

1. The Mission, Vision and Statement of Values of the institution are updated for each specific project, adapted to the circumstances of its historical and geographical environment. In this step, the participation of the authorities of the organization is essential. They are the ones who must have clearer institutional identity.

2. A detailed analysis of each of the project's *stakeholders* is completed in a participatory manner, trying to detect and assess their legitimate aspirations. In these first two stages, the dimensions and scope of the organization are taken into account, as well as the internal and external information available and relevant to the work.

3. With the collected material, the Social Responsibility Policy (SRP) is prepared, aligned with the institutional mission, vision and values. This policy defines the focus and strategic impulse in which the institution decides to commit its social responsibility. The SRP should serve as a guide for action, and in order for it to be deeply shared by all members, it should be specified in a few principles of action.

4. The fourth step is the core of the ESR Plan and consists of applying the SRP and the principles to each of the *stakeholders*. As a result, the corresponding programs, projects and activities are formulated.

5. Proposal for the implementation of the ESR Plan. It is advisable to suggest who will be responsible for the implementation of the Plan. It

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[90] Pujadas, C.; Favarel, I.; Pacheco Gutiérrez, L. F.; Miguel, C.; Madeo, M. & Rodríguez Aguirre, P. (2012). Responsabilidad Social de una institución educativa. En Licha, I. (comp.) *Enseñanza de la responsabilidad social empresarial (pp. 381-396).* Buenos Aires: Sudamericana-PNUD.

also indicates the priority of the projects and the adequate gradualness in the implementation of the initiatives, since they must have the participation of all the actors.

6. Monitoring and evaluation of the plan. It is considered that the ESR Plan will always be a dynamic instrument, permanently updated by the participation of the actors involved. It is also advisable that there be formal instances of evaluation and updating. The evaluation should conclude with an improvement plan for the following year.

Training of Directors of Educational Institutions

The Universidad Austral, Buenos Aires, Argentina, intends in its institutional mission to assume leadership in society[91]:

The Austral University aims at serving society through the search for truth, through the development and transmission of knowledge, training in the virtues and the care of each person according to their transcendent destiny, exercising intellectual, professional, social and public leadership.

In the social field of education, it has promoted the 'School of Education' as the academic unit responsible for its service to society. In addition to the training of teachers and professors at the initial, primary and secondary levels, priority has been given to the professional preparation of the directors and principals of educational institutions.

The Master's Degree in Management of Educational Institutions[92] (MDIE) is the postgraduate training proposal in which the case presented below is framed. This section will describe the experience of nine years (2013-2021), promoting ESD and comprehensive sustainability plans.

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[91] https://www.austral.edu.ar/la-universidad/mision-vision/

[92] https://www.austral.edu.ar/eedu/posgrados/maestria-en-direccion-instituciones-educativas/

It is a graduate two-years program, with a part time workload for students, aimed at facilitating the application of knowledge to the managerial task in educational institutions. The program is fully accredited by the CONEAU, the national agency for institutional evaluation and programs accreditation of Argentina.

In this Master a seminar on Educational Social Responsibility is taught. There are other subjects related to ethics like Management and human anthropology, Organizational Management and Communication, and so on.

The Seminar in ESR has been taught since 2013, and along these years the fundamental content remained the same, although the name of the seminar changed. It was called Project Design and Development at the beginning; after a few years it was integrated into the syllabus of Anthropology and Ethics of Directive Action; and is currently called Educational Social Responsibility Seminar.

Educational Social Responsibility Seminar

The objective of the Seminar is that those responsible for educational institutions (EI) learn the fundamental concepts of ESD within the framework of SD, and that they acquire practical knowledge of how to apply them in the institution in which they work, preparing an ESR Plan, in accordance with UNESCO's ESD Priority 2: "they should develop concrete plans with defined time frames on how to apply the comprehensive institutional approach to ESD, together with their members and the local community"[93].

The MDIE authorities accepted the challenge of teaching how to put ESD into practice, starting with priority 2.

What the Seminar consists of is briefly described below, and then the pedagogical experience from 2013 to 2021 is analyzed.

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[93] UNESCO, 2020, p. 28

Thematic contents:

1. ESR in the framework of Sustainable Development. The main UN and UNESCO documents on Education for Sustainable Development.
2. How far does the social responsibility of EIs go today? Stakeholders Theory Analysis of interested publics.
3. How to make an ESR Plan in six steps.
    a. Update the Mission, Vision and Values
    b. Know and analyse stakeholders
    c. Define the Social Responsibility Policy
    d. Carry out the ESR Plan with its Programs, Projects and Activities. Frame the Projects in the corresponding SDGs.
    e. Implementation of the Plan
    f. Monitoring and Evaluation of the Plan

The seminar lasts 15 clock hours (2 ECTS), half of which are participatory classes, face-to-face or at a distance.

Attendees are principals and directors of educational institutions at all levels, from kindergarten to universities. The vast majority come from private owned institutions, some from state schools, a small percentage is from universities, and the rest work in various educational institutes (i.e.: pilot school, children's and youth school-orchestra, institute for pathological anatomy technicians, etc.).

The students come from all over Argentina, and some years there were participants from Uruguay, Paraguay and Colombia.

Students have to pass a first project, which is the analysis of the internal and external *stakeholders* of the institution. The instruments they use are surveys, focus groups, interviews with key actors, and also administrative information available at the institution and on the internet. The final work is the Educational Social Responsibility Plan of the institution in which they work. The average length is 10 pages. Both

the first presentation and the final proposal are corrected until they reach a satisfactory approval level; the teacher sends personalized comments and feedback.

Since 2013, 125 students have passed the seminar.

Evaluation of the Impact on the Participants

After the completion and approval of the Seminar, the course is evaluated through questionnaires showing high levels of satisfaction among students, with respect to the academic content, the distributed material and the theoretical and practical learning acquired. These positive results corroborate the evidence collected by professors in classes and informal conversations.

In 2021 we sent a more comprehensive questionnaire, with open and closed questions, to all participants who had passed the Seminar since 2013. We describe the results below.

Questionnaire

The questionnaire was sent to 119 alumni and were received 31 responses to the moment we are presenting this contribution.

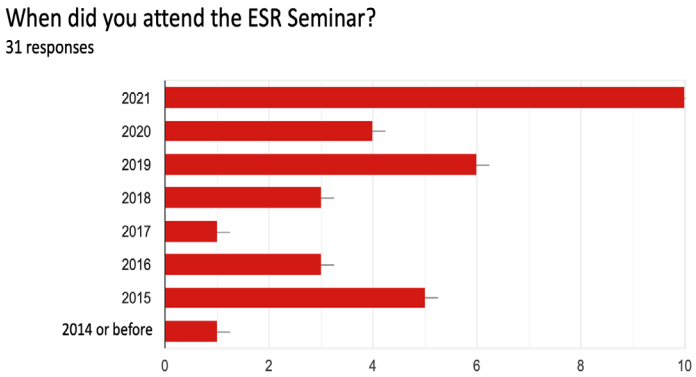


Figure 1 - Year of completion of the ESR Seminar

The most significant data are the following:

1) Question: What do you remember about the main concepts covered there: SD, ESD, ESR , SDG?

The answers state that they understand the concepts of SD, ESD, SDG and ESR, and have assumed the responsibility of educational institutions in relation to the human, social and environmental development of all stakeholders, with the SDGs as a practical reference.

2) When you attended the seminar, these topics (SD, ESD, ESR , SDG) were...

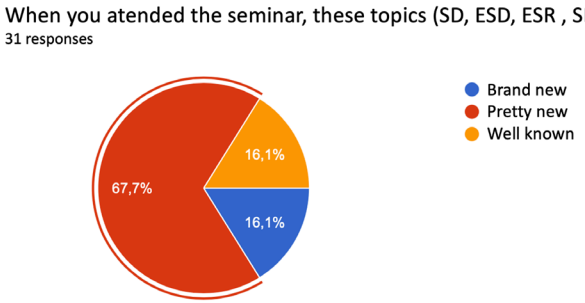


Figure 2 - Familiarity with sustainability issues

3) During these years, did you read any document from UNESCO or other sources on ESD?

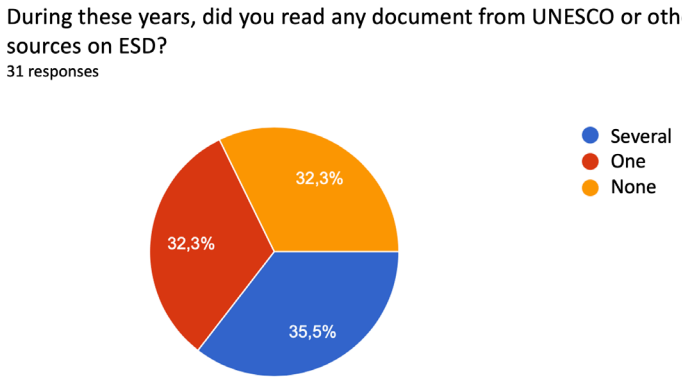


Figure 3 - Reading UNESCO bibliography

4) Did your institution receive references on ESD from the national or provincial educational authorities?

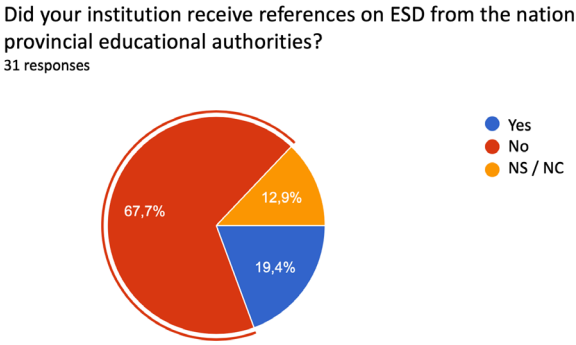


Figure 4 - References on ESD

Comment on questions 2-4:

A positive impact of the Seminar on the participants is that during these years 67.8% have read at least one document referring to the SD, despite the fact that for 83.8% the topics dealt with in the Seminar were quite new or totally new.

67.7% have not received information on SD either from national educational authorities or from other levels; therefore, they have read documents on their own initiative, which could be attributed to the interest aroused by the Seminar.

5) During these years, these concepts were useful to you to:

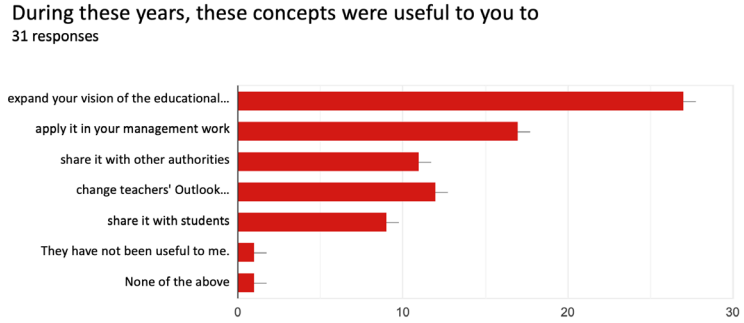


Figure 5 - Application of knowledge

The majority of the participants (87%) recognize a cognitive impact, which we consider very important: having broadened their vision of the educational institution. This is precisely one of the objectives of the Seminar, since we consider that schools tend to suffer from a self-referential look, being locked up in a bubble in which internal problems overwhelm their directors. Assuming the responsibility that corresponds to all stakeholders also opens a window to receive collaboration.

The percentages of students who put ESD learning into practice in their directive and teaching tasks are also important, which produces an interesting dissemination effect.

6) She/He was able to collaborate to incorporate some of these concepts into her/his educational institution in:

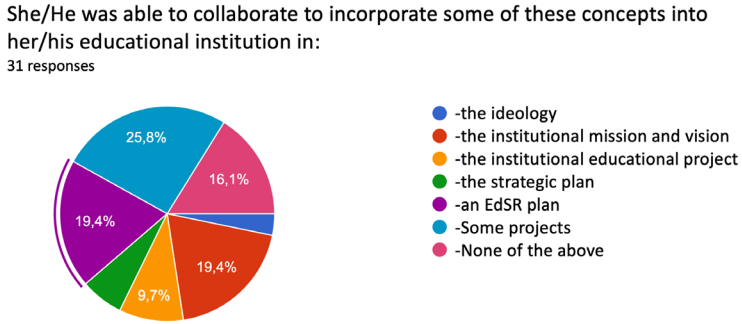


Figure 6 - Application of themes in the institution

Regarding the way in which the participants have been able to incorporate the concepts learned in their institutions, the answers are varied. We think it is worth mentioning the effort that 19.4% have made to implement an ESR Plan, because it is the most arduous and complete objective. They are also very positive achievements as to have incorporated the institutional Social Responsibility in the mission and vision, or in a strategic plan. A good percentage (25.8%) have managed to at least incorporate ESR in some projects.

7) What concrete results did the ESR approach have in your institution?

It is an open question, complementary to the previous one. The responses detail everything from the varied efforts to implement an ESR Plan, to the clash with the misunderstanding of colleagues outside the subject.

8) What help would you need to make an updated ESR Plan in your institution?

The answers are repeated around the need for the following resources: more managerial time, commitment and availability of teachers, budget and training. This last point is important because everyone understands that it is about involving, as far as possible, all internal and external Stakeholders, and for that it is essential to train them in the fundamental concepts.

9) Are you familiar with the 2030 Sustainable Development Goals?

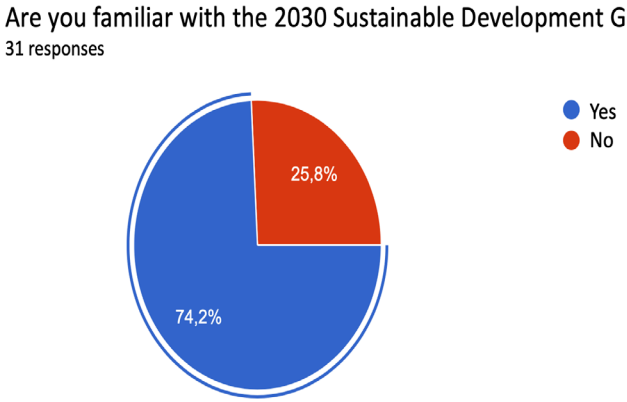


Figure 7 - Knowledge of SDGs

74.2% answered positively to this question. Most of those who are not familiar with the SDGs are people who have attended the Seminar 5 or more years ago, in which the SDGs were covered less extensively.

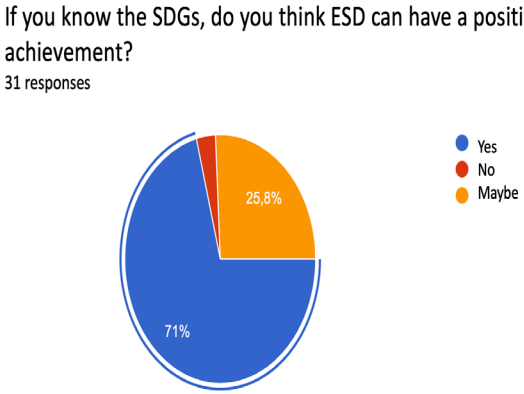


Figure 8 - Incidence in SDG

At the same time, almost 71% think ESD can positively impact the achievement of the SDGs.

10) How is the SDG treated in your institution?

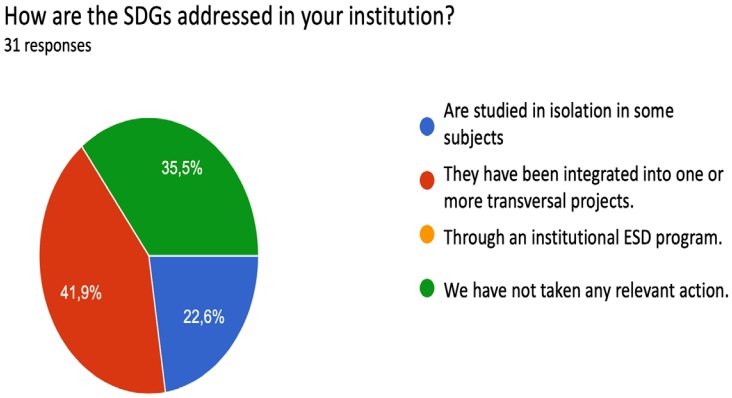


Figure 9 - Treatment of the SDGs

More than 60% are taking positive actions with respect to the SDGs: integrating them in some subjects or in cross-cutting projects.

There are still 35.5% who have not incorporated them into the management of the institution.

Discussion of the Results of the Questionnaire

A general conclusion of the results of this questionnaire is that the impacts produced by the Seminar are consistent with its objectives, which are assumed by the participants, regardless of the level of the educational institutions from which they come, even when they do not belong to educational institutions (non-formal education as a high school computer training online company. This feature coincides fully with the proposal of UNESCO: "ESD entails rethinking the learning environment, virtual and physical. ESD is not confined to schools but applies to all levels of formal, non-formal and informal education as an integral part of lifelong learning. The learning environment itself must adapt and apply a whole-institution approach to embed the philosophy of sustainable development"[94].

In the open and closed answers, it is noted that the vast majority have made clear progress in the transversal competences promoted by ESD in the cognitive dimensions (learning the concepts of ESD), socio-emotional (personal involvement to disseminate ESD in institutions) and behavioural (commitment to actions)[95].

It is also noted in the open responses that the students have assumed the competencies related to empathy and solidarity with a personal commitment. They understand that the drive for ESD is embodied in "education contributing not only to individual success, but also to collective survival and the prosperity of the global community"[96].

The objective of carrying out a comprehensive institutional ESD or ESR Plan is hampered in many cases by lack of time and resources. We understand that behind these requirements is the reality of most educational institutions in Argentina and Latin America, in which daily

[94] UNESCO, 2018, p. 7.
[95] UNESCO, 2020, p.14.
[96] UNESCO, 2020, p. 14.

problems drain the energies of managers and teachers. It is a specific difficulty that can frustrate many projects related to ESD and to develop the institutional plan, so that managers end up limiting themselves to carrying out some isolated solidarity projects. A possible solution is to have an external facilitator, who can dedicate time without being involved in ordinary management, as has been pointed out in the work of Pujadas, Laguto and Lescano[97].

The Pedagogical Experience

The experience with respect to the thematic contents

The theoretical contents that are transmitted are those that we previously reviewed. In the theoretical classes, the teacher's effort is to grasp the fundamental concepts in a participatory way, which are very new to the participants. The responsibility of contributing to the SD of the planet is assumed, from the mission of the organization itself.

Next, the stakeholders theory is presented, which is easy to understand and apply to the reality of an EI. The teacher fills out a blackboard with the internal and external stakeholders, who are naming the participants. The enormous network of relationships with people and community organizations that are woven in the field of EI is graphically displayed. It is the moment to broaden the outlook, which was limited to teachers, students, employees and, in some cases, the families of the students.

The third major issue is already the development of the institutional ESR Plan where each participant works, following the six steps of the Guide presented that serves as guidance. Here we will only make a brief mention of pedagogical experiences.

a) Step 1. Update the mission, vision, and values of the institution, incorporating Social Responsibility.

[97] Pujadas et al, 2021, *op. cit.*

The need to incorporate ESR into institutional documents is evident, so that it is not reduced to isolated solidarity actions, that are in charge of a teacher. In the writing of these documents it is common for students to mention the concepts of SD and ESD.

b) Step 2. Know and analyse the stakeholders

The instruments they use to describe and analyse their stakeholders are surveys, focus groups, in-depth interviews with key informants, and the administrative information available at the institution and on the web.

It is at this point that it is palpably highlighted that SD has 3 components, and that the main one is human and social development. What is important in SD are the people, their aspirations, their needs and their skills: these are the main inputs to develop the ESR Plan.

c) Step 3. Define the Social Responsibility Policy

In addition to what is described in the Guide presented, we add that the student makes an effort of synthesis, defining what is the specific contribution of each EI in the exercise of its social responsibility, and in what aspects differ from others. The mission, vision and institutional values, the available competencies and the needs of the extended educational community will come into play.

d) Step 4. Carry out the ESR Plan with its Programs, Projects and Activities

Programs are prepared for each stakeholder, with their projects and activities. As it is a learning exercise with little time available, it is not carried out in a participatory way in EI, and it is limited to a synthetic description of the objectives, activities and results sought.

e) Step 5. Implementation of the Plan

Experience indicates that for the implementation of the Plan it is convenient to allow plenty of time for the induction and familiarization of the stakeholders with the concepts that were developed in the theoretical framework.

f) Step 6. Monitoring and Evaluation of the Plan

Students are advised to make known both the successes and the difficulties of the implementation when disseminating the evaluation of the Plan annually, so that the publication is attractive and credible.

In recent years, students have begun to be guided to define indicators that facilitate the evaluation of the Plan's Programs.

The experience with respect to the results: the ESR Plans

Since 2013, the 125 students developed more than 100 institutional ESR Plans[98]. In the short duration of the seminar, they learned a methodology that they assimilated and specified in institutional plans that comply with the guidelines of UNESCO documents for ESD Priority 2. The characteristics of these plans can be summarized as follows:

- They reflect an overall vision of the institution, which seeks to harmonize its mission, vision, and values, with those of ESD, in a coherent SR Policy.

- The Institutional Plan, -whole-institution approach- is a very useful tool and well received by IE managers, because it makes it easier for them to integrate dispersed solidarity initiatives that they have carried out with their students for years, in vulnerable populations and in relation to the environment. Therefore, they notice the difference between carrying out isolated actions or having a harmonious Plan, which also allows them to define priorities and discard what is not consistent with the Plan.

- The proposed Programs, projects and activities attempt to respond to the needs of all stakeholders, giving priority to internal stakeholders

[98] The number of Plans does not coincide with the number of students because in some cases there was more than one member of the same IE, and they worked as a team.

first, but with an eye on the common good of the educational community and the local community.

- The Plan focuses on human, social and environmental development. As we have already pointed out in this work, it is not common to find bibliography on the application of ESD to human and social development. Economic development appears mainly in the Plans of universities and professional training institutes, in projects that look at learning entrepreneurship, education for work, business incubator, economic sustainability of EI, etc.

- The SDGs serve as a reference to frame each Project and its activities. In this way, students become familiar with the content and goals of each SDG. In our opinion, the SDGs are not sufficiently operative for EIs, but they do provide a global framework that raises the gaze towards the planet and the long term.

-In many cases, the students of the Seminar have noticed the lack of presence in the SDGs of some anthropological and ethical dimensions to which they attach great importance in their institutions. In this regard, they mention the enormous importance of school-family relationship in the education of children and youth, and that ESD should include as a key stakeholder the families of all educational actors and contribute to its consolidation. Another dimension that is missing from the SDGs is religion, an essential component of the values of many families and many educational institutions, which is very congruent with the ethical perspective proposed by the ESD. In some cases they propose projects that are supported by religious convictions, such as interreligious cooperation for peace.

-It is useful for students to share their concerns and the plans they have made in class and privately, because they learn from each other: peer to peer approach[99].

[99] UNESCO, 2018, p. 48

-The plans they design must be feasible, defining priorities in each case. For this reason, we estimate that the students later manage to implement an ESR Plan –completely or partially-, as we have seen in the results of the Questionnaire.

- EI directors seem to be the most appropriate stakeholders to target in the task of promoting the implementation of institutional plans.

Other Impacts Related to the MDIE Master Program

We mention some initiatives connected with the MDIE Master program that contribute to the dissemination of ESD, in the same direction that promotes UNESCO: "Existing relevant inter-institutional networks are mobilized in order to enhanced mutual peer support: such as to peer learning on a whole-institution approach, and to increase the visibility of the approach to promote it as a model for adaptation"[100].

- The School of Education of the Universidad Austral held in 2015 the VI Annual Conference that had as theme the ESR: *"Manage socially responsible educational institutions: learn, serve, innovate."* Twenty papers were selected for the Proceedings, more than 250 teachers and principals attended, and the publication has been widely consulted with more than 500 thousand pages, 183 thousand different visitors to the web, and has been downloaded more than 7500 times in different formats of electronic book[101].

- The professor of the Seminar publishes a blog on ESR that has more than 135,000 visits from all over the world, with more than 150 entries, that develop particular aspects and news of ESD. (Bids 2021)

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[100] UNESCO, 2018, p. 48

[101] Durand, J. C. y Corengia, A. (Dir.) y Urrutia, M. S. (Coord.). (2016) *Gestionar instituciones educativas socialmente responsables: aprender, servir, innovar*. Buenos Aires: Teseopress. https://www.teseopress.com/gestioneducativaresponsable

- Some MDIE master graduates decided to take ESD as the focus of their future academic specialization.

- At the Rey Juan Carlos University, in Madrid, the Ibero-American ESR Observatory was created, inspired by the MDIE experience. They carry out research and an annual Conference. In 2020 more than 400 participants signed up on line at the meeting.

Educational Social Responsibility Award

General description

The Award for Educational Social Responsibility (AESR) was born in 2019 as a joint initiative between the School of Education at the Universidad Austral, through the Center for Education for Sustainable Development; the National Technological University of La Plata (UTN), through its Institutional Social Responsibility Group (ReSIN); and by the Buenos Aires Cultural Association, and the Ciudad Nueva Cultural Program.

This contest is nourished by the experience carried out by the ReSIN Group of the UTN in the organization of an equivalent award for SMEs in the capital region of the province of Buenos Aires, in conjunction with other local universities.

The organizing institutions of the ESR Award have come together in the search to contribute to sustainable development through education, promoting the incorporation of educational institutions as engines of sustainable development in the area of influence.

It is important to note that this is not a competition between educational institutions, but rather a scenario in which applicants can analyse themselves, identify their strengths and opportunities for improvement, and receive feedback on their current management model. In this way, strengthen their corporate social responsibility strategies

and good practices on management, achieving results more and more positive for society.

The objective is to incorporate a vision or way of approaching institutional management at all its levels. A way that, far from seeking the gaze that focuses on the familiar world of the technical-pedagogical and professional, opens up to perceive and listen to the voices of a growing number of publics interested in what happens in schools and add to the educational mission many other protagonists of social life.

Educational Social Responsibility is a vision of the activity of the educational institution, which integrates respect for ethical values, people, the community and the environment in the context of its daily operations (education) and in decision-making strategic (management)[102].

General objective of the award

To promote and deepen the Social Responsibility of educational institutions, from an approach based on sustainable institutional management.

Specific objectives

a) To recognize and reward schools that are making progress towards incorporating Social Responsibility into their organizational strategy.

b) To promote the joint work of schools, civil society organizations, universities and the State in search of the common good.

c) To transmit the fundamentals of Social Responsibility, promoting a new paradigm in the management of educational institutions.

d) To encourage the use of "Good Practices" through the incorporation of useful tools in daily work, such as the definition of sustainability and improvement indicators that allow the proper

[102] Cf. Carlos Pujadas, www.rseducativa.blogspot.com

implementation and communication of Social Responsibility management programs.

Recipients

Public and private educational institutions, initial, primary or secondary level, can apply for the award. Applications for the award from other formal, non-university educational institutions are also accepted.

Evaluation and Feedback

The organizations that participate in the contest are evaluated by a jury according to the indicators and evaluation criteria defined and reported in the bases and conditions, and grouped into five evaluation axes: (1) Ethics in Management, (2) Personnel, (3) Students and Families, (4) Environment and (5) Community.

The Jury is made up of academically recognized members in teaching of social responsibility issues, and are appointed by the organizing universities. The evaluation criteria contemplated include quantitative and qualitative aspects, as well as definitions of awards and an evaluation report.

Quantitative aspects:

The quantitative evaluation is carried out by the evaluation team that presents itself to the interview with the directors of the institution. A form is used with a guide of twenty (20) indicators grouped according to the 5 evaluation axes. Each evaluator gives a score to the institution. At the end of the survey of all the participants, a meeting is held with the evaluation team and the results are put into a general grid in which the data is consolidated and the scores are adjusted, in common agreement with the whole team, to minimize the subjectivity of the evaluators.

Qualitative aspects:

The qualitative assessment is prepared by the evaluation team that attended the personal interview with the participating institution and that verified the level of application of each item evaluated as: the contribution to society, the degree of sustainability over time, the performance of alliances and cooperation with other actors, the innovative capacity to solve needs or expectations and the impact they have produced.

Definition of awards

The evaluation team submits to the jury the preliminary qualitative reports of the three institutions with the highest score obtained in the quantitative evaluation, together with the complete grid of the quantitative assessment consolidated with all the participants. The jury can define the winner from the shortlist proposed, or request qualitative reports from the evaluation team from another of the organizations that they deem necessary within the grid.

Once the members of the jury come to a decision, the winner is defined, and the evaluation team proposes special mentions for the participants who have had outstanding actions in some of the evaluation axes. These special mentions are awarded during the award ceremony.

Evaluation report

All participating organizations are objectively and professionally assessed by a group of specialists in the field and receive, regardless of the result of the contest, an "Evaluation Report" where the strengths and aspects to be improved are clearly indicated. Reports are drawn up by the evaluation team, at the request of the returns received by the jury of the event.

The quantitative evaluation foresees becoming a ESR management tool for each participating school or institution, since it has been designed to allow performance evaluation, comparing the results

obtained with the group of participating organizations. The quantitative report is a table where the scores obtained in each indicator and group of indicators are observed. It consists of 3 columns: (1) score obtained by the evaluated institution, (2) average score of all participating institutions, (3) maximum score obtained for said indicator in the contest. In this way, the participant obtains information that allows them to know their strengths and weaknesses, as well as seeking to replicate successful experiences of other organizations that have had a better performance in any of the axes.

Here is an example of a report presented:

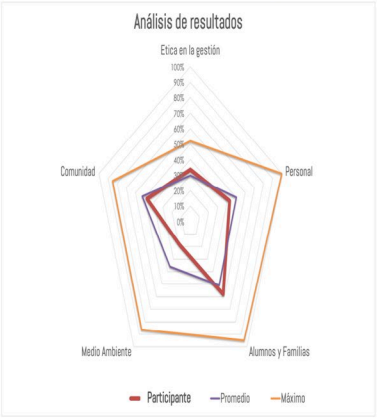


Institución Evaluada:

ID: 23

		Prom	Máx
Puntaje obtenido	42,53		
Puntaje promedio general de participantes de la presente edición	45,73		
Ética en la gestión	**34%**	**39%**	**62%**
1) La institución evalúa su gestión en forma permanente y trabaja bajo estándares de calidad educativa.	50%	39%	80%
2) La institución ha identificado a sus grupos de interés y tiene canales de diálogo estables y permanentes para comunicarse con ellos	30%	45%	100%
3) La institución ha emitido reportes de sustentabilidad (balances sociales)	0%	2%	23%
4) Inclusión Educativa: La institución abre sus puertas a alumnos con capacidades diferentes o trastornos que dificulten su aprendizaje e integración escolar como: discapacidades físicas, Síndrome de Down, Autismo, etc.	100%	73%	100%
Personal	**43%**	**50%**	**100%**
5) La institución se esmera en generar un clima laboral positivo y estable.	55%	53%	100%
6) Formación permanente y desarrollo de habilidades pedagógicas e innovación.	100%	68%	100%
7) La organización establece criterios de equidad interna y competitividad externa de los salarios docentes.	0%	44%	100%
8) El personal docente y no docente recibe periódicamente evaluaciones de desempeño que le permitan perfeccionar sus habilidades y desarrollo en la organización.	40%	44%	100%
Alumnos y Familias	**58%**	**61%**	**95%**
9) La institución ha incluido, o incluye a las familias (padres/madres/tutores) dentro del proceso educativo de los alumnos.	40%	51%	100%
10) La institución evalúa periódicamente los resultados del proceso educativo y toma acciones concretas para mejorarlo	100%	53%	100%
11) Proceso de formación de personas.	100%	69%	100%
12) Formación en sustentabilidad	0%	38%	100%

Medio Ambiente	**19%**	**36%**	**88%**
13) ¿Tienen identificados los impactos de su actividad y aplican medidas para minimizarlos?	30%	47%	100%
14) ¿Tienen política de clasificación de residuos en origen?	45%	19%	100%
15) ¿Cuentan con una política explícita (ej. Campañas con afiches, Charlas al Personal, etc.) sobre consumo responsable de energías (Ejemplo: gas y luz)?	0%	36%	100%
16) ¿Cuentan con una política explícita (ej. Campañas con afiches, Charlas al Personal, etc.) sobre consumo responsable de insumos (Ejemplo: agua y papel)?	0%	41%	100%
Comunidad	**48%**	**53%**	**85%**
17) ¿Tiene relaciones o alianzas con organizaciones locales?	50%	57%	100%
18) ¿Hace partícipe a la comunidad educativa en actividades con ONGs?	45%	63%	100%
19) ¿Participa en actividades donde puede intercambiar ideas, actualizarse, buscar mejoras con otras instituciones educativas?	45%	43%	100%
20) ¿Tienen vinculaciones formales con Universidades e interactúan para promover las formación superior de los alumnos?	50%	53%	100%



The qualitative evaluation is prepared by the evaluation team that attended the personal interview with the participating institution and that verified the level of application of each evaluated item. The observations made by each jury are taken into consideration. General comments are made regarding the findings and general recommendations to improve ESR performance in each area.

Awards

Both a general prize is awarded to the best school or educational institution of the contest, as well as special mentions to those institutions that have presented outstanding actions in each of the evaluation axes, in order to disseminate and divulge good practices among the participants. The winning institutions obtain public recognition at the local level praising the work carried out and receive support during the year the award is in force, by the organizing universities to promote programs and projects that they develop in Educational Social Responsibility.

Conclusions

In our work we have tried to reflect two proposals that seek to apply UNESCO's main guidelines on ESD. Both, the Educational Social Responsibility Seminar and the ESR Award underlies the institutional approach recommended.

Reflection on SD and ESD among IE managers and principals participating in the Master's program leads them to formulate proposals for change in their institutions and is incorporated as valuable learning, an added value to their academic experience.

The ethical dimension of SD and ESD is present and challenges superficial approaches, 'to comply with the Ministry', which is sometimes criticized in environmental education programs.

For those directors and principals of EI, it seems appropriate to enter the ESD through priority 2, as we have proposed. The Six Steps Guide

to a ESR Plan is a tool useful for managers and is in accordance with what the UNESCO proposes as "Key elements for whole-institution Approaches. An institution-wide process is organized in a manner that enables all stakeholders -leadership, teachers, learners, administration- to jointly develop a vision and plan to implement ESD in the whole institution. Technical and, where possible and appropriate, financial support is provided to the institution to support its reorientation. This can include the provision of relevant good practice examples, training for leadership and administration, the development of guidelines**,** as well as associated research"(UNESCO, 2018, p.48).

The Guide proposes a simplified process, but that appears as feasible and does not discourage those who should promote it. It leaves open the possibility of expanding and deepening with study and personal research and in institutional work teams.

The methodology put into practice seems especially suitable to educational institutions that do not have many financial resources to face high-cost plans, as is frequently the case of primary and secondary schools. Likewise, the experience of the university managers who have participated in the Seminar has been positive, and it can be considered a first step, to then move towards more complex methodologies appropriate to USR.

Continuity in the delivery of the Prize for ESR will allow double positive impact: (1) To help participating organizations improve their practices of ESR year after year, (2) and allow the organizing universities to systematize the data collected to carry out different research and transfer projects in related areas.

Promoting a leadership committed to ESD in the directors and principals of educational institutions is an innovative element in Argentina and in the region, and the results collected in the last decade are promising and encouraging for the cultural change that society requires.

Limitations and Future Developments

The five priorities of ESD are interrelated. In this paper we limit ourselves to Priority 2 and, as an extension, to Priority 3, and describe the results in the context of Argentina and Latin America. It is a pending task to continue in the same line with the adaptation of the remaining priorities to our regional environment, expanding the analysis of the possibilities of ESD and ESR to other actors and sectors of the educational system.

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3

ACTIONING 'BE GOOD'

How Torrens University Australia's Research Contributes to Sustainable Development Goals and Impacts Communities and Practices

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Keywords

Applied Ethics, Case Study, Torrens University Australia; SDG 4.

Abstract

Sustainability is an important agenda embedded in Torrens University Australia (TUA)'s research strategy. To illustrate how Sustainable Development Goal (SDG) targets are addressed by Torrens University researchers, this chapter identifies real-world problems and reports on research that has delivered sustainable change. The four case studies presented in this chapter demonstrate impactful research on education, health, and business contexts. These studies show how to address challenges unique to these contexts and implement sustainable improvements.

A strategic priority of TUA is to provide research and education outcomes that improve people's health and wellbeing. To 'be good' and 'be well' are core TUA values. These institutional values influence the research process and assessment of research impact at TUA. The 'Be Good' agenda shapes the university's interdisciplinary approach to addressing quality education (SDG 4). Notably, TUA's intentional prioritisation of access and equity values in research enables multiple SDGs to be addressed, as identified within the case studies reported in this chapter. TUA's research strategy encourages such studies that develop sustainable solutions, by promoting research focused on helping people and their communities enact positive and enduring change*.

Introduction

In 2015, world leaders outlined a global plan for a more interconnected future that provided social and economic security for all: 'Transforming Our World: The 2030 Agenda for Sustainable

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Development'.[103] The agenda outlined 'a plan of action for people, planet, and prosperity'.[104] The target date for the achievement of this agenda was 2030, now leaving less than a decade to achieve the lofty ambitions of the Sustainable Development Goals (SDGs). Despite criticism labelling SDGs quixotic[105], a global will to enact principles outlined in the goals remains. Policies and practices are increasingly seeking to embed sustainable developments for transforming the world. Ultimately, achieving SDGs means global transformation in how societies and economies function and integrate with nature. As 2030 approaches, a sense of urgency is warranted given persistent gaps between SDG objectives and global socio-economic conditions, especially in the context of COVID-19 and post-pandemic recovery.

Sustainability is an important agenda embedded in Torrens University Australia (TUA)'s research strategy.[106] To prioritise sustainability, TUA strategically organises researchers into interdisciplinary teams formed around themes that deliver positive social, environmental, and economic impacts through collaboration with community, industry, and other researchers. For research to have impact, solutions that help people and their communities enact sustainable change must be developed, delivering innovation and sustainability outcomes that address SDG targets.

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[103] United Nations General Assembly, *Transforming Our World: The 2030 Agenda for Sustainable Development*, A/RES/70/1 (21 October 2015), https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_RES_70_1_E.pdf.

[104] United Nations General Assembly, *Transforming Our World*, 1.

[105] Gunzel-Jensen, Siebold & Kroeger, 2020: "Do the United Nations' Sustainable Development Goals matter for social entrepreneurial ventures? A bottom-up perspective"

[106] TUA, *Torrens University Australia Strategic Research Plan 2021–2025* (TUA, 2020).

This chapter will highlight a range of interdisciplinary research projects that draw on the theme of sustainability. Specifically, each project illustrates TUA's commitment to research that makes a positive impact and, in doing so, presents targeted ways of addressing the identified SDGs. The research case studies demonstrate collaborations and thought leadership that make positive impacts on communities, both locally and globally, through improving access to quality education, health and services; promoting more equitable practices; and creating the foundations for transformative change. The chapter will demonstrate the innovative character of TUA research and important steps taken towards achieving SDG targets.

Sustainable Development Goals: An Integrated Approach

A total of 17 SDGs has identified pressing global challenges, and 169 targets have been set to stimulate actions towards alleviating these challenges.[107] The 17 goals broadly encompass people, the planet, prosperity, peace, and partnerships (see Table 1). The goals focus on alleviating poverty, creating better basic living conditions, especially for developing nations, creating more equitable social and economic outcomes, promoting a more sustainable way of living, and better managing the earth's ecosystems. The resolution adopted by the United Nations (UN) General Assembly on 25 September 2015 stipulates that all the goals are inseparable and integrated.[108] The goals will guide policymakers and practitioners in confronting economic, social, and environmental challenges, improving five overarching objectives of development goals including social inclusion, environmental

[107] A full list of targets for each goal can be found at http://www.un.org/sustainabledevelopment/sustainable-development-goals/.
[108] United Nations General Assembly, *Transforming Our World*, 1.

sustainability, global prosperity and, finally, global cooperation and peace.

Table 1. Interconnectedness of the 17 SDGs with Five Foci[109]

5 'Ps' of the Development Goals	Interrelated SDGs
• People	− No Poverty (Goal 1) − Zero Hunger (Goal 2) − Good Health and Wellbeing (Goal 3) − Quality Education (Goal 4) − Gender Equality (Goal 5) − Clean Water and Sanitation (Goal 6)
• Prosperity	− Affordable Clean Energy (Goal 7) − Decent Work and Economic Development (Goal 8) − Industry, Innovation and Infrastructure (Goal 9) − Reduce Inequalities (Goal 10) − Sustainable Cities and Communities (Goal 11) − Responsible Consumption and Production (Goal 12)
• Planet	− Climate Action (Goal 13) − Life below Water (Goal 14) − Life on Land (Goal 15)
• Peace and Partnerships	− Partnerships for the Goals (Goal 17)

[109] The table is sourced from Stephen Morton, David Pencheon and Neil Squires, 'Sustainable Development Goals (SDGs), and Their Implementation: A National Global Framework for Health, Development and Equity Needs a Systems Approach at Every Level', *British Medical Bulletin* 124, no. 1 (2017), https://doi.org/10.1093/bmb/ldx031.

Table 1 illustrates the interconnectedness of the 17 SDGs when the five foci are mapped against the goals. The table shows that while the five foci are standalone, each contains specific goals that are also integrated with broader socioeconomic and environmental targets. The interconnected nature of the goals and their underlying targets have prompted researchers to advocate for more systemic approaches to achieving SDG objectives.[110]

Most organisations have an embedded focus on sustainability and have set specific targets that are relevant in the context of the organisation.[111] Higher education institutions, and universities specifically, are also active in promoting sustainability as a concept and practice that shapes governance, operations, and education. However, the urgency of the SDG agenda demands a further embedding of sustainability practices to accelerate specific goals and targets. These targets are relevant to universities in at least two ways. First, as large organisations, the strategies and plans need to reflect policies and practices that enable people, the planet, prosperity, peace, and partnerships as part of their daily operations. Second, by shaping research and education, universities identify how learning, teaching, research, and education can contribute to the achievement of SDG targets. For example, affordable and clean energy (SDG 7) is an area of keen research in universities. Universities tackle the goals and targets of SDG 7 by 'promoting sustainability through combining sustainable energy with the processes of knowledge transmission and research'.[112]

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[110] Morton, Pencheon and Squires, 'Sustainable Development Goals'.

[111] Stuart Hart and Mark B. Milstein, 'Creating Sustainable Value', *Academy of Management Executive* 17, no. 2 (2003): 62, https://doi.org/10.5465/ame.2003.10025194.

[112] Amanda L. Salvia and Luciana L. Brandli, 'Energy Sustainability at Universities and Its Contribution to SDG 7: A Systematic Literature Review', in *Universities as Living Labs for Sustainable Development*, ed. Walter L. Filho et al. (Cham: Springer, 2020), 29.

University research is also driving better quality education (SDG 4) and practices that enable equitable access to education at all levels.[113] There are numerous initiatives that draw on the SDGs and aim to offer solutions towards meeting SDG targets.

Setting a SDG Research Course for Torrens University

Torrens University Australia (TUA) is a private, investor funded, university. As a for-profit organisation, the decision to prioritise social justice, sustainability principles and a commitment to connect the world for good is voluntary. Torrens has chosen to Be Good. Subsequently, TUA has developed the 'Be Good' agenda which outlines principles for empowering 'people to connect the world for good' that align with SDG objectives.[114] The Be Good philosophy of TUA runs parallel and symbiotic to its certification as a B Corporation (B Corp). Businesses accredited with the B Corp certification must satisfy social and environmental performance targets and report annually on social impact to maintain public transparency and legal accountability. The Torrens Be Good philosophy and B Corp status is woven into the fabric of the institution, from its governing strategic plans to employee paid volunteer days. Torrens stands by the belief that 'together we can create a more sustainable world where purpose, passion and profit sync together for the greater good'.[115]

Research at TUA, like all areas, is guided by the Be Good philosophy. The TUA Research Strategic Plan 2021-2025 orients research efforts toward four themes 'to bridge across boundaries to

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[113] Stephanie Allais et al., 'Universities, The Public good, and the SDG 4 Vision', in *Grading Goal Four*, ed. Antonia Wulff (Leiden: Brill, 2020).

[114] Torrens University Australia (TUA). *Social Impact Report 2021*. TUA, 2021.

[115] Torrens University Australia (TUA). *Social Impact Report 2021*. TUA, 2021.

address complex local and global issues of significance'. [116] The four themes of Security and Sustainability, Building Health Solutions, Societies in drastic change, and People and Industry for impact, map to TUA's Be Good philosophy and indirectly to the SDGs (see table 2, Conclusions). The four research themes are also mapped, in the Research Strategic Plan 2021-2025, to national research classification and reporting requirements. This provides the mechanism through which the Be Good philosophy is brought to life and actioned via research. The TUA Strategic Research Goals provide the foci for research, including priority publishing and grant areas, in ways that compliment and contribute to SDG goals.

All research centres set explicit Be Good goals. In particular, the newly established research Centre for Healthy Sustainable Development's (CHSD) holds as its unique aim to address SDGs. The centre's charter states that it aims 'to work towards healthy sustainable development' that links 'the UN SDG goals to current, important, and complex policy issues in Australia (and across the globe) including health, education and housing'.[117] The CHSD organises its research efforts into three streams that align with SDG 3 of Good Health and Wellbeing, SDG 4 of Quality Education and SDG 11 to make cities and communities sustainable via secure housing for all. TUA research centres provide the clustering of expertise and activity to support the research themes. Additionally, all employees, including researchers, are urged to set annual Key Performance Indicators (KPIs) that demonstrate how their work will contribute to Be Good. This encourages researchers, within the context of their expertise and research centre, to contribute to Be Good goals. Additionally, TUA research applies six Be Good

[116] Torrens University Australia (TUA). *Torrens University Australia Strategic Research Plan 2021-2025*. TUA, 2021.

[117] Torrens University Australia (TUA). *Centre for Healthy Sustainable Development 3-Year Strategic Plan*. TUA, 2022.

principles when assessing the appropriateness/value of grant applications, external research projects and prospective research partners. These six Be Good principles are:

- Champion the power of people to connect the world for good,
- Contribute to the betterment of Australian society, economy, education and/or research,
- Uphold our commitment to diversity and inclusion, and respect for Indigenous peoples,
- Give due consideration to the impact on all stakeholders, including shareholders, employees, students, customers, participants, and partners,
- Partner organisations committed to social responsibility, and
- Improve society in Australia and globally.

These principles provide a tool for robust decision-making that ensures our efforts maintains the vision and achieves our Be Good promise. These examples demonstrate how social and economic sustainability can be integrated into governing policy and practice, which then has a flow-on effect to research actions.

The research culture at TUA is cultivated to support, recognise and celebrate work that has positive impacts on people and places. For example, TUA's annual research awards celebrate excellence in supporting TUA's Be Good mission through research that has positive impacts on people and communities. Additionally, TUA research adds to and benefits from Be Good internal and external events and communications. For example, the 'Research That Matters' podcast series in 2022 explored the intersection and positive impacts of research, industry and practice. This endeavour showcased the interdisciplinary work and impact of emerging scholars and research elders alike. It is, however, never just one person, project or effort, but the collective work and contributions of many, with exemplary 'Be Good' leadership and

vision, that shape the unique fabric of Torren's research foci on social and economic sustainability and equity.

Research Enabling Sustainable Development Goal 4: Quality Education Enabling Access and Equity that Frames a Research Agenda

This chapter demonstrates how TUA enables the SDGs as part of its Be Good agenda that shapes research priorities. The research presented in this chapter is prompted by concerns about people and their future considering ongoing disparities in education, health, and employment. Concerns about access and equity within these contexts are essential to the research which focuses on meeting the needs of people and their future, as well as how people are connected to a collective future.

Equity is an everyday concern of decision-making based on the distribution of resources.[118] How resources are distributed is reflective of cultural values and draws on theories of social justice.[119] Distributing an unlimited supply of resources to all would be desirable if it were not for the scarcity of resources. The post-COVID-19 context has exacerbated this resource distribution dilemma, particularly, for universities facing extensive austerity measures. This further complicates the desire for people to gain access to all the resources they need. Decisions must be made and sharing rules defined to determine how resources will be distributed appropriately.

The resource equity allocation rule 'is a method, process or formula that allocates any given supply of goods, among any potential group of

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[118] H. Peyton Young, *Equity: In Theory and Practice* (New Jersey: Princeton University Press, 1995).

[119] Commission on the Social Determinants of Health (CSDH) (2008) *Closing the Gap in a Generation: Health Equity through Action on the Social Determinants of Health. Final Report*. Geneva: World Health Organization.

claimants according to the salient characteristics of those claimants'.[120] As a Public Benefit Corporation, TUA has explicit and legal requirements to positively impacts its partners, students and society more broadly. TUA's *Social Impact Report* is a testament to values-based decision-making that prioritises education equity in distributing appropriate resources to those that are directly impacted and where the need is most urgent.[121] The Be Good charter states:[122]

> Every student who walks through our doors is trusting us with their lives and their futures. This is why we don't shy away from our role as change makers through our teaching, our research, and our engagement. But we strive for something more. You will see in this report that through our Be Good agenda, we deliver impact for communities and individuals where it is most urgent and needed, through harnessing the energy of our people, facilitating community engagement, embedding change making and advancing public leadership.

The focus on equity shapes how the researchers at TUA facilitate their research aims, how they engage with individuals and the community, and what impact is made through the research. The Be Good values promote equity in shaping decision-making about research and its purpose. A framework that promotes access and equity essentially places the needs of people at the centre of research. The research presented here examines how the needs of people can be better supported to reach a sustainable solution. This research is participatory and involves input from people about solutions and how these can be embedded into their lives. Research with an access and equity focus is

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[120] Young, *Equity*, 8.

[121] TUA, *Social Impact Report*.

[122] TUA, *Social Impact Report*, 5.

people-centred,[123] as it respects the lived experiences and knowledge of the participants.[124] The purpose of this research is to shift from pre-packaged solutions to coordinated and localised problem-solving by tackling social and structural impediments.[125]

Through equity-inspired research, TUA's Be Good mission integrates with SDG 4 to promote quality lifelong education as well as other SDGs. For example, explicit action plans to ensure equitable educational experiences of learners with disabilities means a commitment towards creating accessible and inclusive environments for students with disabilities. TUA policy states, 'We are committed to meeting our obligations outlined by the *Commonwealth Disability Discrimination Act 1992* (DDA) and the Disability Standards for Education 2005, and ensuring a great student experience can be had by all'.[126] Equity-based action plans are illustrated in practice through partnering not-for-profit organisations like the Inclusion Foundation (previously e.motion21) and conducting research on TUA's Impact21 program. This program offers an innovative transition to work-related learning for a cohort of young adult learners with Down syndrome (DS). This research aims to reduce the impediments to employment for these

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[123] Andrew Sayer, *Why Things Matter to People: Social Science, Values and Ethical Life* (New York: Cambridge University Press, 2011).

[124] Anna Bennett, 'Access and Equity Programme Provision-Evaluation in Australian Higher Education: A What Matters Approach', *Educational Research and Evaluation* 24, no. 8 (2018), https://doi.org/10.1080/13803611.2019.1643740.

[125] Chau Trinh-Shevrin et al., 'Defining an Integrative Approach for Health Promotion and Disease Prevention: A Population Health Equity Framework', *Journal of Health Care for the Poor and Underserved* 26, no. 20 (2015): 146, https://doi: 10.1353/hpu.2015.0067.

[126] TUA, 'Access and Equity Policy', accessed 26 July 2021, https://laureateaus.sharepoint.com/sites/MyTorrens/SitePages/Operations/Student/Sub-pages/Disability%20Services%20.aspx.

individuals by co-creating a program that draws on the needs of the students, the employers and university learning. This example showcases the access and equity framing of the research and demonstrates a commitment to providing for the needs of these learners; to ensure their health and wellbeing (SDG 3), access to quality education (SDG 4), reducing inequalities (SDG 10) and access to decent work (SDG 8).

The following four case studies that follow are presented by TUA researchers to illustrate the Be Good philosophy in action and showcase meaningful research that impacts people, communities, and their prosperity. The first case study describes research undertaken by Drs Denise De Souza and Zelinna Pablo, alongside a not-for-profit organisation. Their study reports findings from formative evaluation work undertaken to enhance a program designed to make an impact on the personal and working life of young adults with intellectual disability. The Impact21 initiative, which began in February 2019, aimed to establish and make more accessible a holistic tertiary educational training and employment pathway for individuals living with Down Syndrome (DS). The second case study features research led by Professor Simon Stewart, National Health and Medical Research Council of Australia Senior Principal Research Fellow. The study involves a collaboration with partners in Mozambique and surrounding low-income countries (LICs) in Southern Africa to build sustainable health research programs that improves the health of vulnerable African communities. The findings provide insights into unique causes, consequences and practical solutions to cardiopulmonary disease of vulnerable individuals and communities in Africa. Case three describes research led by Professor Craig McLachlan. In this study, the Nepal Development Society (NDS) conducted a retrospective evaluation of the Community-Based Intervention for Blood pressure reduction In Nepal (COBIN) trial data. The COBIN trial was initiated to train female

maternal health volunteers in Nepal to screen and deliver a health literacy intervention to improve blood pressure.[127] Case four's research, conducted by Dr Hayden McDonald, examines Workplace Health Promotion Programs (WHPP) implemented by a sample of Australian universities to improve employee health. The study documents difficulties with balancing the business and social outcomes attributable to WHPP's, highlighting the importance of considering how workplace systems and structures (e.g. committees, partnerships and key-performance measures) influence program implementation. The case studies demonstrate how TUA fosters an unique approach to accelerating actions targeting SDG achievement. The institution-wide interdisciplinary research integrates the people and prosperity foci[128] of several SDGs (see Table 1) to showcase an innovative systematic approach to research that emphasises how higher education can promote notions of equity and access and how research can be applied to address numerous SDG targets.

Case Study 1: Research Addressing SDGs by Enabling Disability Access to Education and Work

Impact21: Providing Quality Education and Fostering Equitable Outcomes for Individuals with Down syndrome

The SDGs emphasise enhancing social inclusion, especially for marginalised groups,[129] and people with DS are one of the most marginalised groups. Their marginalisation is exacerbated through the

[127] Dinesh Neupane et al., 'Community-Based Intervention for Blood Pressure Reduction in Nepal (COBIN Trial): Study Protocol for a Cluster-Randomized Controlled Trial', *Trials* 17, no. 1 (2016), https://doi.org/10.1186/s13063-016-1412-3.

[128] Morton, Pencheon and Squires, 'Sustainable Development Goals'.

[129] Emma Tebbutt et al., 'Assistive Products and the Sustainable Development Goals (SDGs)', *Globalization and Health* 12, no. 1, (2016), https://doi.org/10.1186/s12992-016-0220-6.

lack of access to quality education, especially post-secondary education, and training that would better prepare them for the world of work. This case study presents a formative evaluation that is framed by an integrated response to meeting SDG objectives based on a program for young adults with DS. The evaluation focuses on the design and delivery of quality education (SDG 4) to a cohort of young adults with DS experiencing inequality through reduced access to education, training and employment. The evaluation thus supports SDG 4's fifth target, which foregrounds the need to ensure that vulnerable people, including persons with disabilities, obtain access to all levels of education and vocational training. Education and training are instrumental to work, which is key to the social and economic inclusion of all, including the inclusion of persons with disabilities, a point also foregrounded by SDG 10.2.

The initiative is situated within the context of social policy reform taking place in the disability service system in Australia. The reform is being implemented via the National Disability Insurance Scheme (NDIS),[130] that gives individuals access to funding that may be utilised for employment training and support.[131] Despite the scheme, the Organisation for Economic Co-operation and Development, in 2017, reported the under-representation of employees living with a disability

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[130] Megan Moskos and Linda Isherwood, 'Individualised Funding and its Implications for the Skills and Competencies Required by Disability Support Workers in Australia', *Labour & Industry: A Journal of the Social and Economic Relations of Work* 29, no. 1 (2019), https://doi.org/10.1080/10301763.2018.1534523.

[131] Karen R. Fisher et al., *Effectiveness of Individual Funding Approaches for Disability Support* (Occasional Paper No. 29, Canberra: FaHCSIA, 2010); Liberal Party of Australia, 'Our Plan to Support People with Disability', accessed 25 August 2019, https://www.liberal.org.au/our-plan-support-people-disability.

or a mental health condition in Australia's labour market.[132] The employment rates of people with intellectual disability (ID) remain low when compared to the general population. In 2012, it was noted that only 39% of people with ID in Australia are employed, in comparison to 55% and 83%, respectively, of individuals living with other disabilities or no disabilities.[133] The lack of employment and active participation in economic life, due to experienced inequalities, affects the wellbeing of people with disabilities. Research shows that perceived independence is essential for the employment readiness of those living with disabilities.[134] As the life expectancy of individuals with DS nears 60,[135] with one in 10 individuals living into their 70s,[136] the role of post-secondary education has become more integral to ensuring health and opportunity for young adults with DS. Evidence shows a positive

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[132] Simon Darcy and Tracy Taylor, 'Australia's Disability Discrimination Problem in Three Charts', *The Conversation*, 12 October 2017, accessed 2 May 2019, https://www.abc.net.au/news/2017-10-12/disability-discrimination-in-the-workplace-in-three-charts/9038178.

[133] Australian Bureau of Statistics, 'Intellectual Disability Australia, 2012', accessed 26 July 2021, https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/4433.0.55.003main+features452012.

[134] Ben Barr, Philip McHale and Margaret Whitehead, 'Reducing Inequalities in Employment of People with Disabilities: The Impact of National Labour and Social Protection Policies', in *Handbook of Disability, Work and Health*, ed. Ute Bültmann and Johannes Siegrist (Cham, Springer, 2019).

[135] Marie M. Channell and Susan J. Loveall, 'Post-High School Transition for Individuals with Down Syndrome', *International Review of Research in Developmental Disabilities* 54 (2018), https://doi.org/10.1016/bs.irrdd.2018.07.003.

[136] Jennifer Torr, Andre Strydom, Paul Patti and Nancy Jokinen, 'Aging in Down Syndrome: Morbidity and Mortality', *Journal of Policy and Practice in Intellectual Disabilities* 7, no. 1 (2010), https://doi.org/10.1111/j.1741-1130.2010.00249.x.

connection between education and wellbeing, health and employment. This extends to individuals with ID such as DS.[137]

The work undertaken by researchers in the research Centre for Healthy Sustainable Development aimed to address the inequities facing young adults with DS by formatively improving on the design of an innovative industry-based education and training program to ensure that individuals with DS have access to the necessary skills and knowledge that would lead to more equitable employment opportunities and outcomes.

The Research Process

The designers of the Impact21 program contended that few education-to-work training programs, for individuals living with ID in Australia, have established a direct pathway to the possibility of longer-term employment. Therefore, the purpose of the formative evaluation was to inform the implementation of education initiatives that structured meaningful learning experiences within a holistic tertiary educational training and employment pathway. The aim was to develop and trial a hands-on, functional and relevant curriculum that would incorporate workplace skills and knowledge to prepare students for real work experience. The first part of the initiative was on campus and the second part consisted of workplace 'taster' experiences. At the end of the workplace 'taster experiences', students were able to nominate their preferred workplace, and efforts were made to secure employment for the students. The research always had a real-world focus to achieve equitable outcomes for students that would lead to longer-term,

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[137] Anja Holwerda, *Work Outcome in Young Adults with Disabilities* (The Netherlands: University of Groningen, 2013); Janet Robertson et al., 'The Association between Employment and the Health of People with Intellectual Disabilities: A Systematic Review', *Journal of Applied Research in Intellectual Disabilities* 32, no. 6 (2019), https://doi.org/10.1111/jar.12632.

meaningful employment for individuals living with DS and, ultimately, improve both their economic and social wellbeing.

Twelve young adults with DS participated in the program. Their parents and teachers were also recruited. The involvement of parents was critical, as they are integral in providing young adults with DS with support and helping them make decisions. A broad spectrum of research was undertaken involving interviews, observations, and evaluation, all of which were detailed and undertaken according to TUA's ethical guidelines.

Key Findings

Curriculum and Quality Education for Individuals with Down syndrome

The design of the Impact21 curriculum comprised 1) developing socio-emotional, communication and job-related skills and competencies; 2) learning how to maintain overall health and fitness; and doing so 3) within an inclusive university setting. The university base was critical in helping habituate participating students to the practices of institutions and organisations, thereby providing students with a range of social skills that were translated into workplace behaviours. The content was developed and trialled, and progressively improved by foregrounding work-based skills into the learnings. Feedback from employers was sought to improve the curriculum for the next program iteration and incorporated a focus on the skills of listening, following instructions, interacting, and problem-solving. Quality communication and developing confidence also underscored all the student learning. As such, speech therapy content was an important curriculum that would further facilitate students' greater participation in the workplace.

Students' Education and Well Being

Students' motivations for joining the program revolved around opportunities for self-improvement, extending social circles and gaining some financial independence. After the completion of the program, student participants reported becoming more motivated and future-focused. They noted a broader outlook of employment: moving from a narrow, financial-focused, short-term perception to a longer-term, more holistic view of work. Although student participants reported high confidence in their likelihood of obtaining and maintaining employment following completion of the program, mentors voiced concerns about the realism of their goals due to employment barriers for people with intellectual disabilities.

The students identified the importance of the program in giving them greater confidence in communicating. The students spoke of the feeling of being 'at home' within the university and described how having access to university-based study made them 'feel good'. The feeling of being at home, feeling good and being excited underpins the emotional connection to universities as inclusive spaces which increase students' confidence.

Parental Support

Parental responses suggested the program filled existing gaps in the training and employment of adults with DS. These include challenges in securing sustained employment, receiving opportunities to improve self-worth, gaining exposure to work-related social and life skills, experiencing job progression, being assigned a broader scope of work rather than mostly repetitive tasks when in employment, and accessing national employers who could provide more job security.

Teachers' Education and Support

Dedicated staff trialled extensive hands-on, active, and participatory teaching. The teaching staff made a significant connection with the students, broadening their classroom roles as teachers to advocates and coaches.

University Life Inclusion and Reducing Inequality

One of the challenges encountered in the research was the short timeline available to strategize, plan and coordinate more inclusion activities. A more deliberate effort that maps how inclusion might take place throughout the year—for example, through participation in the university's orientation week, workshops to create awareness, and social and sporting events—would ensure more consistent and sustained inclusion of the participants within the larger university.

Employers' Access and Opportunity

Prospective employers revealed the need to develop employment policies and practices specific to individuals with DS. This information would aid prospective employers to confidently build practices within their organisation and have more certainty in employing individuals with DS. The confidence gap of employers points to the lack of research about inclusive employment practices for individuals with DS in workplaces and underscores the need for further experiential-based research to build more robust knowledge that can shape employment policy and outcomes for people with DS.

Case Study Implications for Sustainable Development Goals

Access to Relevant Education Leading to Work

It is estimated that over 15% of the world's population have a disability,[138] yet the needs of disabled and vulnerable people are not

[138] Grech, 'Disability and Development'.

explicit in the SDGs. People with disabilities are impacted by social and economic factors in numerous ways. The 2030 Agenda for Sustainable Development focuses on economic, social, and environmental development to ensure that all people have access to prosperity. For people with disabilities, the lack of access to a range of services, education and opportunities means that they experience obstacles and barriers that prevent them from having a more active and fuller participation in their life. This case study reports on research undertaken by the Centre for Healthy Sustainable Development at TUA to draw on research-informed education, training, and work transition capabilities, to assist a group of individuals with DS in acquiring a broader range of skills and knowledge that would lead to employment. The case study exemplifies our commitment to addressing SDGs within our research. This case study of an innovative program to support the education-to-work transition of a group of young adults with DS demonstrates an integrated approach to addressing the SDGs. The research focused on designing and delivering quality education that meets the needs of the students, especially the need for targeted post-secondary education that would prepare students for the world of work. As mentioned earlier, such programs demonstrate specific pathways to achieving inclusive and equitable access to lifelong learning, education and training opportunities for persons with disabilities (SDG 4, specifically target 4.5), thus addressing hurdles to social and economic exclusion often experienced by vulnerable groups (SDG 10.2).

Work is ongoing in this area. To expand on this research, a TUA team is now conducting a multi-country comparative case study of Impact21 with other similar transition-to-work programs for persons with intellectual disabilities that are embedded in tertiary settings in Chile and in Ireland, with the specific aim of analysing what makes such programs sustainable over the long-term. While this research is in early stages, emerging findings indicate that historical, socio-political, and

educational policy mechanisms are relevant contextual factors leading to important nuances between seemingly similar programs, among them different degrees of embeddedness within the tertiary educational institution.

Case Study 2: Building Sustainable Health and Research Programs in Mozambique

Having established an emerging pattern of heart disease linked to both historically prevalent factors such as malnutrition and childhood infectious diseases and recent epidemiological transition in the neighbouring country of South Africa, we turned our attention to neighbouring African countries likely to be earlier in the evolution of cardiovascular risk and disease.

According to nearly every measure published by the World Health Organisation (WHO) and World Bank, Mozambique is one of the poorest countries in the world. Spanning more than 2,000 km along the Indian Ocean (see Figure 1), much of its young population of approximately 30 million live in rural and peri-urban regions. They heavily rely on major hospitals in urban centres, such as Maputo (approximately 1.3 million people), Beira (approximately 500,000 people) and Nampula (approximately 650,000 people) located in the Southern, Central and Northern regions for health care. As reported by the World Bank,[139] recent economic growth in Mozambique has widened socioeconomic disparities (with half the population still living in poverty and many of these people living in rural regions). Critically, they each share much in common with neighbouring poverty-stricken

[139] The World Bank, 'Mozambique Economic Update: Less Poverty, but More Inequality', accessed March 2021, https://www.worldbank.org/en/country/mozambique/publication/mozambique-economic-update-less-poverty-but-more-inequality.

countries (also identified by the World Bank as low-income), such as Malawi, Zimbabwe, Zambia, and Tanzania.



Figure 1.

Many of the UN's 17 SDGs are inexorably linked to enhancing the future health and wellbeing of those living in LICs, such as Mozambique.[140] Unfortunately, Africa remains home to many of the poorest billion people worldwide.[141] Moreover, it is falling behind in many development goals.[142]

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[140] United Nations, 'Take Action for the Sustainable Development Goals – United Nations Sustainable Development', accessed March 2021, https://www.un.org/sustainabledevelopment/sustainable-development-goals/.

[141] Gene F. Kwan et al., 'Endemic Cardiovascular Diseases of the Poorest Billion', *Circulation* 133, no. 24 (2016), https://doi.org/10.1161/CIRCULATIONAHA.116.008731.

[142] Gene Bukhman et al., 'The Lancet NCDI Poverty Commission: Bridging a Gap in Universal Health Coverage for the Poorest Billion', *Lancet* 396, no. 10256 (2020), https://doi.org/10.1016/S0140-6736(20)31907-3.

As first revealed by *the Heart of Soweto Study*,[143] in a large African urban community, a cruel paradox is in play as we try to facilitate and meet these aspirational goals. Specifically, many individuals fortunate enough to survive historical diseases of poverty (i.e., malnutrition and communicable diseases) are vulnerable to developing Non-Communicable Diseases (NCDs) later in life.[144] As in the rest of the world, NCDs in Africa are linked to urban migration, economic development and unhealthy environments and lifestyles that result in a high burden of disability and death.[145] Unlike the rest of the world, with the notable exception of Australia's Indigenous population,[146] it is younger adults and women at the prime of their socioeconomic potential who are most affected in Africa.[147] Overall, NCDs are responsible for one-third of disability-adjusted life-years in vulnerable African communities.[148]

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[143] Karen Sliwa et al., 'Spectrum of Heart Disease and Risk Factors in a Black Urban Population in South Africa (the Heart of Soweto Study): A Cohort Study', *Lancet* 371, no. 9616 (2008), https://doi.org/10.1016/S0140-6736(08)60417-1.

[144] Simon Stewart et al., 'Standing at the Crossroads between New and Historically Prevalent Heart Disease: Effects of Migration and Socio-Economic Factors in the Heart of Soweto Cohort Study', *European Heart Journal* 32, no. 4 (2011), https://doi.org/10.1093/eurheartj/ehq439.

[145] Fausto Ciccacci, Stefano Orlando, Noorjehan Majid and Cristina Marazzi, 'Epidemiological Transition and Double Burden of Diseases in Low-Income Countries: The Case of Mozambique', *The Pan African Medical Journal* 37 (2020): 49, https://doi.org/10.11604/pamj.2020.37.49.23310.

[146] Alex Brown et al., 'Cardiometabolic Risk and Disease in Indigenous Australians: The Heart of the Heart Study', *International Journal of Cardiology* 171, no. 3 (2014), https://doi.org/10.1016/j.ijcard.2013.12.026.

[147] Kwan et al., 'Endemic Cardiovascular Diseases'; Sliwa et al., 'Spectrum of Heart'.

[148] Gene Bukhman, Ana O. Mocumbi and Richard Horton, 'Reframing NCDs and Injuries for the Poorest Billion: A Lancet Commission', *Lancet* 386, no. 10000 (2015), https://doi.org/10.1016/S0140-6736(15)00278-0.

The *Heart of Soweto Study*[149] revealed that diseases affecting the heart (and lungs) of adult African men and women are different from those in the rest of the world.[150] Surveillance studies across the continent have highlighted African-specific health issues that add to the already heavy burden of infectious diseases and injuries. These include poorly detected and controlled high blood pressure (hypertension),[151] heart failure in pregnant women (peripartum cardiomyopathy)[152] and conditions affecting the right heart and lungs (pulmonary hypertension).[153] Critically, due to higher economic growth, communities such as Soweto in South Africa are further along the pathway of epidemiological transition. Theoretically, they are decades ahead of a phenomenon (increasing cardiovascular risk due to greater urbanisation and economic mobility) than their African neighbours. Thus, there is an opportunity to learn more about (and delay/prevent) the same process in countries like Mozambique.

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[149] Simon Stewart et al., 'A Not-So-Rare Form of Heart Failure in Urban Black Africans: Pathways to Right Heart Failure in the Heart of Soweto Study Cohort', *European Journal of Heart Failure* 13, no. 10 (2011), https://doi.org/10.1093/eurjhf/hfr108.

[150] Pauline Cavagna et al., 'Antihypertensive Strategies and Hypertension Control in Sub-Saharan Africa', *European Journal of Preventive Cardiology* (2020), https://doi.org/10.1177/2047487320937492.

[151] Kamilu M. Karaye et al., 'Clinical Features and Outcomes of Peripartum Cardiomyopathy in Nigeria', *Journal of the American College of Cardiology* 76, no. 20 (2020), https://doi.org/10.1016/j.jacc.2020.09.540.

[152] Friedrich Thienemann et al., 'The Causes, Treatment, and Outcome of Pulmonary Hypertension in Africa: Insights from the Pan African Pulmonary Hypertension Cohort (PAPUCO) Registry', *International Journal of Cardiology* 221 (2016), https://doi.org/10.1016/j.ijcard.2016.06.242.

[153] Ashley K. Keates et al., 'Cardiovascular Disease in Africa: Epidemiological Profile and Challenges', *Nature Reviews. Cardiology* 14, no. 5 (2017), https://doi.org/10.1038/nrcardio.2017.19.

Establishing a Sustainable Program of Non-Communicable Disease-Focused Research in Southern Africa

For the past 5–6 years, Professor Simon Stewart and his research group have worked closely with a TUA Adjunct Professor, Ana Mocumbi, and her research teams based at the Mozambique Institute for Health and Education Research (with close links to the Mozambique Government, the National Institute of Health, and a network of health facilities across the country) to build research capacity in NCD-focused research, health information systems and, ultimately, health programs and policies.

In an African first, we conducted the ***MOZ****ambique snA****p****shot of eme****R****ging* ***T****rends (MOZART) Disease Surveillance Study*. Involving clinicians from three hospitals servicing impoverished communities in Maputo, Beira and Nampula (with 2,000 km between the former and latter, with minimal air services), we captured data on approximately 8,000 emergency presentations of all ages during two 30-day/24-hour during the 'dry' and 'wet' seasons.[154]

In the absence of primary care services (and even ambulances for traumatic injuries and emergencies), our selected hospitals represent a barometer of the spectrum of disease and injury across Mozambique. Among many important and insightful findings, this study revealed a high and unmet burden of poor heart and lung health across Mozambique that is characterised by key differentials in - a) urban versus peri-urban locations, b) demography, c) socio-demographic profiles, d) clinical history (e.g., TB/HIV); e) household conditions with deadly exposure to indoor air pollution and f) seasonal fluctuations in the pattern of disease that will only worsen in response to climate change.[155]

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[154] Ana O. Mocumbi et al., 'Differential Patterns of Disease and Injury in Mozambique: New Perspectives from a Pragmatic, Multicenter, Surveillance Study of 7809 Emergency Presentations', *PLoS One* 14, no. 7 (2019).

[155] Mocumbi et al., 'Differential Patterns'.

Revealing the True Heart and Lung Health of Southern Africa

It was from this initiative that we highlighted the dangers of indoor air pollution in Africa.[156] We also developed a pragmatic algorithm to detect early-to-established forms of cardiopulmonary disease in low-resource/income clinical settings.[157] When combined with our 'mapping' of the pattern of poor heart and lung disease across the lifespan (see Figure 2 below), this pilot program led to the design and building of the interdisciplinary Socioeconomic and Environmental Antecedents to Reveal the Cardiopulmonary Health of Africa (SEARCH-AFRICA) Program outlined below.

As shown in Figure 2, the MOZART Disease Surveillance Study revealed an alarming pattern of lung disease and then combined heart/lung disease in those seeking emergency care from the three diverse communities in Southern, Central and Northern Mozambique.[158] As noted above, differential patterns of disease were evident and reflected in upper versus lower respiratory disease based on urban versus peri-urban/rural dwelling peoples, as well as the time of the year. However, with an estimated one in 20 mainly impoverished peoples living adjacent to the Mavalane General Hospital in Maputo seeking acute care for cardiopulmonary disease, the overall trends look ominous for the future heart and lung health of this young, impoverished country.

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[156] Ana Mocumbi et al., 'Cardiovascular Effects of Indoor Air Pollution from Solid Fuel: Relevance to Sub-Saharan Africa', *Current Environmental Health Reports* 6 (2019), https://doi.org/10.1007/s40572-019-00234-8.

[157] Simon Stewart et al., 'Clinical Algorithm to Screen for Cardiopulmonary Disease in Low-Income Settings', *Nature Reviews Cardiology* 16, no. 1 (2019), https://doi.org/10.1038/s41569-019-0268-0.

[158] Mocumbi et al., 'Population Study'.

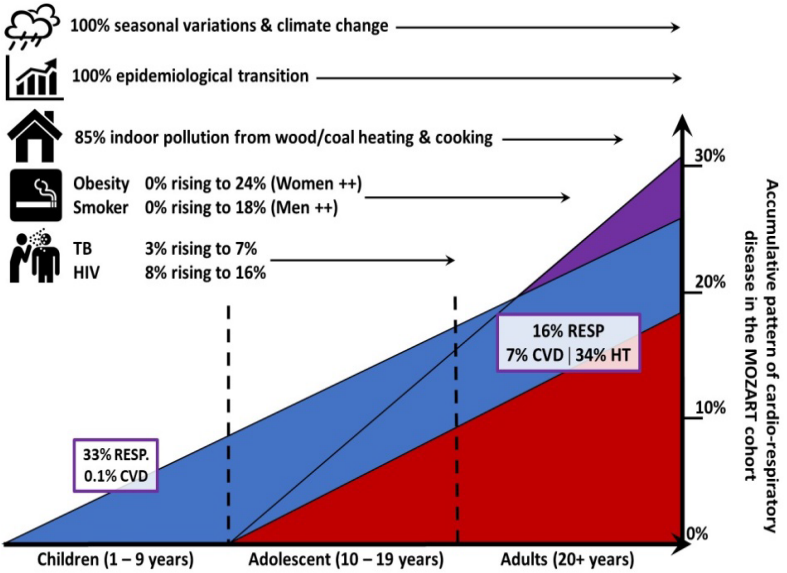


Figure 2. The Increasing Confluence of Poor Heart and Lung Health in the MOZART Cohort

Notes: This figure plots the pattern of lung/respiratory disease (RESP) and heart/cardiovascular disease (CVD) in different but representative age groups of people presenting for emergency care across Mozambique.[159]

Clearly, there are a multitude of factors that are driving a new burden of disease in Mozambique, with a predominance of women and adults in the prime of their lives most likely exposed to a combination of historical disease of poverty (i.e., malnutrition and communicable diseases), unhealthy environments (from indoor to outdoor air pollution) and the adoption of unhealthy lifestyle behaviours. Without a comprehensive response, from surveillance to new health systems and health policies, Mozambique, like many LICs in the region and wider

[159] Mocumbi et al., 'Population Study'.

Africa, will never have a healthy population effort to meet the UN's SDGs.[160]

It is for the above reasons that, with the explicit support of TUA's Centre for Cardiopulmonary Health, Professor Mocumbi and her team have developed the ambitious goal of undertaking the SEARCH-AFRICA health services research program (see Figure 3). Concurrently, with institutional partners in Africa (University of Cape Town in South Africa to the Aswan Heart Centre in Egypt), the USA (Harvard University and University of California – San Diego) and the UK (University of Glasgow), Professor Mocumbi is leading an initiative to establish a Global Health Research Centre for Cardiopulmonary Health in Southern Africa. Once fully realised, this centre will be a hub for significant research collaboration and capacity building across Mozambique and the broader Southern African region. This would entail innovative state-of-the-art educational and research strategies implemented by a new generation of African health researchers and expert research support personnel.



[160] Bukhman et al., 'Reframing NCDs'.

Figure 3. The SEARCH-AFRICA Research Program

Notes: As low-income/low-resource countries, Mozambique and the broader Southern African region are in desperate need of a coordinated program of health services research, from community and clinical surveillance programs to trials of innovative programs to optimise heart/lung health.[161] This ambitious program is attempting to intimately involve local communities in and with the design of health programs specifically meeting their needs. This is evident, for example, in plans to test an innovative intervention where a local bank micro-finances impoverished households to sustainably purchase cleaner household fuel to improve the quality of the air they (and their infants/children) breathe every day.

The Way Forward for Mozambique

It is important to note that in attempting to publish our initial findings from the MOZART Disease Surveillance Study and subsequent plans for the SEARCH-AFRICA Program, there has been much scepticism about the value and even validity of our research approach from the editorial teams of peer-review journals and funders. Despite scepticism regarding initial findings from the MOZART Disease Surveillance Study and subsequent plans for the SEARCH-AFRICA Program , the Heart of Soweto study's results have since appeared in major medical and cardiology journals. As Professor Mocumbi notes, it would have been much easier if we had studied and reported on a single disease state (preferably a communicable disease), but such cases are rare in Mozambique and neighbouring countries. The irony of this unfortunate situation is the belief that the complex health issues facing the diverse peoples of Africa can be neatly distilled from the global or

[161] Gene Bukhman et al., 'The Lancet NCDI Poverty Commission: Bridging a Gap in Universal Health Coverage for the Poorest Billion', *Lancet* 396, no. 10256 (2020), https://doi.org/10.1016/S0140-6736(20)31907-3.

regional projections (in the absence of health information systems and, therefore, actual data) of disease. Paternalistic prejudice and protection of large swathes of research funding by individuals and institutions operating outside Africa represent a major threat to any attempts to develop meaningful and impactful health services research.[162] It is noteworthy that the UK-based National Institute for Health Research are trying to better understand the local context and needs of LIC's in this respect. Concurrently, internal factors (e.g., political and institutional corruption, entrenched health inequalities at the population level and armed conflict) are difficult to overcome at local and regional levels.

Mozambique, with its geographically dispersed and diverse population of approximately 30 million people, nearly half of whom are children/adolescents, represents a microcosm of the complex challenges facing the wider region and African continent. In simple terms, there are immediate educational and economic challenges to be met. For example, the sheer volume of young children means that many schools (and individual teachers) run three separate classes per day. Concurrently, poverty rates remain stubbornly high. Linked to all these issues is the loss of adults in the prime of their life: the average life expectancy remains in the mid-50s and fewer than one in 20 people reach the age of 65 years.[163]

Through our collaborative program of support and mentorship, we have identified poor overall health and, specifically, the unique combination of heart/lung disease as a major limitation in the future socioeconomic growth of Mozambique. This applies equally to similarly impoverished countries throughout Africa. Having carefully planned how we attend to address this, both through sustainable capacity building and innovative research and health service solutions, our

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[162] Stewart et al., 'Clinical Algorithm'.

[163] The World Bank, 'Mozambique', accessed March 2021, https://data.worldbank.org/country/MZ.

challenge now (to ourselves and the rest of the world) is to implement these solutions. Subsequently, we will need to assess their impact not only on individual health metrics and longevity but also within the prism of the broader SDGs established by the UN. Our collaborative program of research is of direct relevance to achieving several SDGs, including target 3.4 regarding the reduction of premature mortality from noncommunicable disease through prevention and treatment which falls under SDG 3 of Good Health and Wellbeing and targets 10.3 and 10.B under SDG 10 of Reduced Inequalities. Particularly, in that 10.3 looks to reduce inequalities of outcome through practice and action and 10.B in how this research seeks to support the most impoverished and disadvantaged communities in African countries and encourages the flow of finances and expertise.

Case Study 3: Cardiovascular Disease Reduction in Nepal—Providing Quality Education and Fostering Equitable Chronic Disease Management Outcomes in Nepal

Case Study Context

SDG 3 emphasises the need to enhance good health and wellbeing. As part of this development goal, the prevention of chronic disease is important in communities (as recognised in SDG indicator 3.4.1 and target lifestyle changes for prevention and treatment 3.8). As countries like Nepal have become more westernised, there have been significant improvements in mortality and morbidity related to infectious diseases. However, with the adoption of a westernised diet and lifestyle, chronic diseases and associated modifiable risk factors have escalated. For instance, there is a high level of hypertension in Nepal with levels currently around 24–27% in community screening studies.[164] As a

[164] Dinesh Neupane et al., 'Effectiveness of a Lifestyle Intervention Led by Female Community Health Volunteers versus Usual Care in Blood Pressure

university with a global interest in health equity and solutions, Professor Craig McLachlan's team has been concerned with the perception that there is a high level of hypertension across urban and rural communities of Nepal. McLachlan and team know, through their research, that establishing baseline measurements of blood pressure through mass coordinated screenings help to identify a health need for lifestyle modifications and to better manage individuals with identifiable elevated blood pressure.[165] Hypertension is a risk factor for stroke and serious cardiovascular disease, including myocardial infarction and heart failure. Stroke and cardiovascular disease are chronic diseases that impact families, the economy, and the distribution of limited health recourses. Indeed, society mapping and models of economic cost to economies also represent a research gap in developing countries.[166] McLachlan's team can now use baseline hypertension prevalence to help frame and influence policy directions in Nepal to address blood pressure.

Reduction (COBIN): An Open-Label, Cluster-Randomised Trial', *The Lancet. Global Health* 6, no. 1 (2018), https://doi.org/10.1016/S2214-109X(17)30411-4.

[165] Dinesh Neupane et al., 'Awareness, Prevalence, Treatment, and Control of Hypertension in Western Nepal', *American Journal of Hypertension* 30, no. 9 (2017), https://doi.org/10.1093/ajh/hpx074; Kamal Ghimire et al., 'Knowledge, Attitudes, and Practices Related to Salt Consumption in Nepal: Findings from the Community-Based Management of Non-Communicable Diseases Project in Nepal (COBIN)', *Journal of Clinical Hypertension (Greenwich)* 21, no. 6 (2019), https://doi.org/10.1111/jch.13544.

[166] S. U. Raymond, S. Leeder and H. M. Greenberg, 'Obesity and Cardiovascular Disease in Developing Countries: A Growing Problem and an Economic Threat', *Current Opinion in Clinical Nutrition and Metabolic Care* 9, no. 2 (2006).

A vicious cycle of inequity can be created by chronic diseases that become difficult to manage.[167] Community marginalisation is exacerbated by a lack of health literacy, screening opportunities to interact early and provide educational messages at the community level. In Nepal maternal female community health volunteers have been retrained to measure blood pressure within their respective communities. This has led to the better identification and management of blood pressure. Importantly, female health volunteers are already embedded in the health system. The use of female health volunteers allows for expanding human resources for community blood pressure screening and health education interventions.

Key to a community health reform is the leverage that can be demonstrated by active NGO engagement with different levels in the health system and the community. NGOs with strong academic networks can facilitate health policy change and interventions at the community level with evaluation and evidence to support policy initiatives. This case study demonstrates research that is framed by an integrated response to meeting SDGs 3.4, 3.5, 3.8, 3.a and 4.7 and objectives for health, wellbeing and disease reduction in communities that have limited and fragmented health infrastructure. The case study demonstrates how two research programs for hypertension in Nepal intersect with actions that enable the SDGs. The research explores the design and delivery of quality education (SDG 4.7) to urban and remote geographical communities experiencing chronic disease inequality through reduced access to health education and understanding community health risk factors. The research also focuses on the health and wellbeing of the participants (SDG 3.4, 3.5, 3.8 and 3.a), as healthy

[167] Lago-Peñas et al., 'The Impact of Socioeconomic Position on Non-Communicable Diseases: What Do We Know About?', *Perspectives in Public Health* 141, no. 3 (2020), https://doi.org/10.1177/1757913920914952.

living promotes an engaged workforce and has economic returns to the community and Nepal.

This initiative is situated within the context of significant social health policy reform driven, in part, by interactive NGOs that also engage various stakeholder groups, including the government health ministry, female health workers, academic networks and primary healthcare clinics. This creates opportunities for non-Nepalese background researchers to work with local academics, via the Nepal Development Society, to better understand both the drivers of disease and the complexities of the health systems.

Previously, NGOs in Nepal have been criticised for initiating programs that are fragmented or have no sustainable implementation plan.[168]This blood pressure intervention and policy reform are being coordinated with the Nepal Development Society, as a NGO partner, which leads and coordinates training, fieldwork, governance, health policy and data management, and government linkages.

The research undertaken by the Centre for Healthy Futures at TUA has aimed to address the inequities of Nepalese communities with individuals with poorly managed or undiagnosed blood pressure issues. Innovative community-based education programs have been designed to target blood pressure knowledge, measurement, and health communication strategies for communities. Importantly, program outcomes are evaluated. The training and implementation of the program delivered by female health workers, for example, can be

[168] Rajendra Karkee and Jude Comfort, 'NGOs, Foreign Aid, and Development in Nepal', *Frontiers in Public Health* 24, no. 4 (2016): 177, https://doi.org/10.3389/fpubh.2016.00177.

modelled using economic tools to establish both outcome effectiveness and cost-effectiveness.[169]

The Research Process

The Nepal research programs have contended that while many education-to-community training programs exist, few have tried to create a pathway that leads to the possibility of longer-term changes in health and lifestyle factors that induce sustainable changes in health outcomes. Therefore, the purpose of the research was, first, to understand and describe the problem. The problem is the perception of a high rate of undetected hypertension in communities, a high level of borderline hypertension and a high burden of poorly managed blood pressure in individuals. Thus, the first aim was to explore the magnitude of the problem. The second aim was to pilot education initiatives. The specific role of health workers was to measure blood pressure in the community, educate the community (on common modifiable blood pressure risk factors), and develop a referral pathway for those found to have hypertension.

Important to this process are cohort studies, with long-term follow up measurements, to understand the impact of education programs and their sustainability in communities. The aim was to develop and trial a targeted screening and health education program, and then measure its impact on blood pressure changes over time. The COBIN trial is the only study in a developing country to engage female health volunteers (already valued as part of the maternal health system) to deliver an intervention as well as measure and report levels of blood pressure that require management.[170] The cohort has now been followed up twice and a third follow-up is planned. We have also reported on the learning

[169] A. Krishnan et al., 'Cost-Effectiveness and Budget Impact of the Community-Based Management of Hypertension in Nepal Study (COBIN): A Retrospective Analysis', *Lancet Global Health* 7, no. 10 (2019).

[170] Neupane et al., 'Effectiveness of a Lifestyle Intervention'.

experiences of female health volunteers in learning to measure blood pressure.[171] For the female health volunteers, prior to blood pressure screening, their services had not been previously engaged for blood pressure reduction or was focused on chronic disease management. While female health volunteers are an integral part of the health services, their sole responsibility has previously been to reduce female birthing complications.

Key Findings

Curriculum and Quality Education for Individuals with Chronic Diseases in Nepal

The design of the Nepal interventions and the screening programs (COBIN and May Month) thus far have been completed through co-design and have comprised 1) competency-based training for blood pressure screening in urban and remote settings with female health volunteers, 2) providing intervention studies on how to improve health and fitness at the community level within the family home and 3) engaging our university partners to evaluate the data that has been collected. The university base was critical in helping to bring in new higher degree students to work on the projects that pre-existed with our partners in Nepal; namely, the Nepal Development Society. Students were provided with a range of social skills that were translated into the needs of Nepal via bi-directional engagement. The content was progressively developed and trialled, incorporating a student-led approach, applying for appropriate grants, developing a comprehensive systematic review on the topic and developing a framework for health policy reform. Learning in this space places an emphasis on collaborative strategies with NGOs and Nepalese academic networks.

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[171] Dinesh Neupane et al., 'Literacy and Motivation for the Prevention and Control of Hypertension among Female Community Health Volunteers: A Qualitative Study from Nepal', *Global Health Action* 8 (2015).

This provides training for higher degree students in both academic research, public health, and NGO settings. By default, the specific Nepalese NGO-based needs were incorporated into student training, with a focus on health policy, public health, chronic disease management, capacity building in low-resource countries, reflective listening, collaboration, interacting, identifying gaps in health services and problem-solving. Higher degree students are now addressing health challenges in Nepal and having a critical positive impact on health systems.

Students' Education and Wellbeing

Students' motivations for joining the case study research program revolved around opportunities for community engagement and preventing chronic disease in LICs. This is particularly true for expatriate students from Nepal or those who have visited Nepal. There is a desire to learn abroad at TUA and bring to Nepal best research practices and apply these skills to public health program development relating to chronic diseases. Students will have the skills to implement and evaluate programs as well as develop relevant health policies. The Nepalese blood pressure screening and intervention case study that has been described provides opportunities as a testbed for public health interventions that can be student-developed or tested by students. Indeed, Nepal has many students who have expressed interest in this model of education.

Both TUA and external collaborative higher degree students identified the importance of this program in giving them a greater voice in Nepal. The students see the investment in Nepal by TUA as a unique opportunity to link formally to an NGO as well as fellow academic networks in the USA, Denmark, and Nepal, which collaborate together on these multidisciplinary projects.

Teachers' Education and Support

Dedicated academic supervisors in TUA can support and develop research interests in Nepal's public health. There is also educational research interest in social science aspects of how additional programs can be developed and sustained.

University Life Inclusion and Reducing Inequality

The Nepal project presented here is an example of a case study where the research was ongoing and brought into TUA by an academic professor. This is a case of where the university can value-add to pre-existing programs and support ongoing research and align appropriate PhD and MPhil students.

Case study Implications for Sustainable Development Goals

The 2030 Agenda for Sustainable Development focuses on economic, social, and environmental development to ensure that all people have access to prosperity. For people with chronic diseases or who are at risk of chronic diseases, the lack of access to health education and health workers at the community level is evident. There has been a national call in Nepal to tackle chronic disease. There is a need for academic strategies to re-explore models of care that are community-aligned. This case study reports on research undertaken by the Centre for Healthy Futures at TUA to draw on research-informed public health training and engagement with NGOs, to assist with an identified problem of a nation with unacceptable levels of hypertension in the community. The case study exemplifies our commitment to addressing SDGs 3, 4 and 10 within our research, with a particular focus on health and wellbeing. This case study illustrates how research directly targets the reduction of inequality in health, through close alignment of female health volunteers and primary care networks in Nepal. The model demonstrates how an NGO can be involved in the coordination and leadership of a program. The NGO has shown value in encouraging

academic research collaboration. It is, indeed, encouraging to see an NGO that is led by young academics from Nepal with a passion to improve public health outcomes for cardiovascular disease and collaborate with diverse global universities that add back to public health development in Nepal, such as TUA.

Scalability is dependent on the buy in for the coordination and implementation of a volunteer health worker model. The uniqueness of this model in Nepal it was the first to re-align female health volunteers to chronic disease management. It has been noted coordinated health volunteers in other capacities are now being deployed in other developing nations such as Africa to assist in the management of HIV.[172] The success of any volunteer health worker model is dependent on alignment with pre-existing health systems and infrastructure even if in a weakened state.

Case Study 4: Progressing Sustainable Development Goals through Well-Designed Workplace Initiatives

Sustainable development goals have been established by the UN to develop appropriate settings and conditions for protecting people and the planet. Improving people's health and wellbeing is an important agenda of these goals.[173] The following discussion outlines the design and findings of Hayden McDonald's research that examines links between

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[172] Shelley KD, Frumence G, Mpembeni R, George AS, Stuart EA, Killewo J, Baqui AH, Peters DH. Can volunteer community health workers manage multiple roles? An interrupted time-series analysis of combined HIV and maternal and child health promotion in Iringa, Tanzania. Health Policy Plan. 2018 Dec 1;33(10):1096-1106. doi: 10.1093/heapol/czy104.

[173] Nour Chams and Josep García-Blandón, 'On the Importance of Sustainable Human Resource Management for the Adoption of Sustainable Development Goals', *Resources, Conservation and Recycling* 14 (2019), https://doi.org/10.1016/j.resconrec.2018.10.006.

workplace health promotion programs (WHPPs) and several SDGs. Workplaces have an important role in progressing SDGs, providing important settings to alleviate health risks for the broader population.[174] Various initiatives to achieve improved health (SDG 3) include prevention and treatment to reduce mental illnesses (SDG 3.4), addictions (SDG 3.5), and occupational hazards (SDG 3.9), while increasing the capacity of workplaces to manage such health concerns.[175]

This case study introduces a framework for guiding the implementation of WHPPs and considers managerial settings for promoting their implementation. Workplaces will be more likely to provide munificent support to employees when evidence of the links between business and social outcomes exist.[176] Selecting appropriate systems and structures for implementing WHPPs will help to link business objectives with broader concerns such as improving people's health (SDG 3) and working conditions (SDG 8), and promoting equality (SDG 10). Developing effective partnerships (SDG 17) to support the selection and implementation of WHPPs will also ensure that organisations and communities benefit from a healthy and productive workforce.

Research Design

A multi-method qualitative research design was used to examine how universities in the process of implementing WHPPs balance

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[174] Nugent et al., 'Investing in Non-Communicable Disease Prevention and Management to Advance the Sustainable Development Goals', *The Lancet* 391, no. 10134 (2018).

[175] Ilona Kickbusch and Don Nutbeam, 'A Watershed for Health Promotion: The Shanghai Conference 2016', *Health Promotion International* 32, no. 1 (2017), https://doi.org/10.1093/heapro/daw112.

[176] Parry and Johnson, 'Contextualizing Leisure Research', 125.

employee and organisational demands.[177] First, content analysis was used to develop a framework for analysing WHPP implementation from theoretical and practical perspectives.[178] Archival data, including minutes of meetings, planning documents, policies and procedures and advertising materials, was gathered from the websites of eight Australian universities and subsequently stored and analysed within NVivo. The coding process was iterative, moving between data and theory, to refine a framework for implementing WHPPs and identify how workplace systems and structures influence program implementation. The coded content and categories were discussed and validated by a panel of peers before being validated by employees within the university sector. Content analysis findings were then used to study an organisation in the process of implementing WHPPs. Applying content analysis findings to a case organisation in the process of implementation enabled interactions between WHPPs and workplace systems and structures to be explored as they emerged.

This research developed a framework for implementing WHPPs that improves employee health (and addresses several SDG objectives) while accounting for various systems and structures that influence program implementation. Actor–network theory's recognition that 'humans are acted on as much as they act', helped to extend this research inquiry more broadly.[179] Adopting this methodology—with its neutral perspective on the agency of human and non-human actors—provided opportunities to trace the active role non-humans play in implementing WHPPs and defining health. Based on this theoretical perspective, this study analysed how systems and structure such as committees and

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[177] Brewer and Hunter (2006); Teddlie and Tashakkori (2006).

[178] Klaus Krippendorff, *Content Analysis: An Introduction to Its Methodology*, 4th edn (Thousand Oaks: Sage Publications, 2018).

[179] François Cooren, James Taylor and Elizabeth Every, *Communication as Organizing: Empirical and Theoretical Explorations in the Dynamic of Text and Conversation* (Hillsdale: Lawrence Erlbaum, 2006), 82.

performance measures enable health and productivity to be measured and managed through WHPPs. Conducting this research through an actor-network lens is important for advancing SDG objectives as it highlights the systemic shifts required to make these goals valuable and manageable for organisations.

Key Findings and Discussion: Impact on Community Practice

The material features of organisations create the contexts for decisions and actions to target several SDGs. Therefore, examining how business and social objectives embedded within workplace systems and structures influence ideas about health and WHPP implementation is important to progress SDG objectives. [180] This case study developed a framework for improving WHPP implementation, titled Health Issues, Risks and Activities (HIRA) framework. The HIRA framework helps organisations to implement a comprehensive range of WHPPs that target several SDGs (specifically, SDGs 3, 8 and 10) while reinforcing the importance of a collaborative approach to implementation that involves diverse stakeholders (SDG 17).

Good health (SDG 3), inclusive work outcomes (SDG 8) and equality (SDG 10) through WHPPs

The HIRA framework identified health issues such as cardiovascular disease and mental illnesses (SDG 3.4), and health risk factors such as addictions (SDG 3.5) and discrimination (SDG 10.3) to target through WHPPs. In addition to these health concerns, activities commonly used in the WHPPs of sampled universities were identified, such as the distribution of brochures, flyers, guides and posters and organisational culture, policy and structures. The HIRA framework showed that

[180] Nour Chams and Josep García-Blandón, 'On the Importance of Sustainable Human Resource Management for the Adoption of Sustainable Development Goals', *Resources, Conservation and Recycling* 14 (2019), https://doi.org/10.1016/j.resconrec.2018.10.006.

universities implement a comprehensive range of WHPPs that balance targeted health concerns with diverse activities to improve desired outcomes. The relative ease with which organisations can promote employee health was also evident in analysing WHPP implementation using the HIRA framework. For example, activities such as the distribution of brochures, guides, flyers and posters provide cost-effective tools for communicating health information. Many universities used such activities to market a range of institutional services available to employees, such as counselling initiatives.

The importance of implementing a comprehensive range of WHPPs within workplaces reinforces the integrated nature of employee health and SDGs. This integration is evident with SDG 8.5 and 8.8 which promote the importance of 'decent work' and 'safe and secure working environments' for all people. Such targets require investment into workplaces strategies and practices that are inclusive and improve accessibility for marginalised communities. Thus, the case study emphasises the importance of coordinated approaches that align the interests of diverse institutions, (work)places, and people around SDG objectives. The coordination of laws, policies and practices underlies several SDGs (e.g. SDG 10.3 links inequality to discriminatory laws, policies and practices). The HIRA framework is useful for considering varying motivations for WHPPs as it accounts for uncertainties both in terms of targeting relevant employee health concerns and selecting among various activities to implement. For example, legal requirements to prevent discrimination and harassment meant these health risks were primarily targeted through systemic changes to workplace culture and policy rather than other activities.

The commitment of universities to WHPPs was dependent on various political, business and social interests being managed. Variables such as laws, strategies, performance measures, costs and risk appetite altered how universities selected activities to include in WHPPs. Health

issues and health risk factors were comprehensively targeted when the likes of legitimate internal and external suppliers could be relied on to implement and manage programs. For example, all universities offered initiatives to address mental health (SDG 3.4) given legislative prerogatives and access to institutional initiatives, such as mental health first aid. Few universities targeted oral health given limited legal and political motivations to do so in Australia. The choice of activities to include within WHPPs was also significantly influenced by anticipated costs or participation rates than by the impact activities would have on improving health and wellbeing (SDG 3). A health, safety and wellbeing director explained that promoting employee health entails 'shades of grey because the obligation is to prove that health promotion is in the university's interest and convince employees to care about their health'. Performance measures emphasised implementation outcomes over employee health outcomes, which were considered to be more subjective. Various measures were used to track program outcomes, such as the number of participants or events run. Conversely, evaluation measures were based on health outcomes only when institutional benchmarks existed, such as with Weight Watchers (e.g., weight loss per workforce).

The importance of partnerships (SDG 17)

It is important to have diverse stakeholders such as governments, organisations, academics, and people working collaboratively to achieve SDG objectives. In particular, SDG 17.16 targets the formalisation of partnerships between diverse stakeholders to share knowledge, expertise, technology and resources in advancing SDG objectives. Sampled universities operated in different locations but developed similar systems for managing WHPP implementation. Despite being autonomous entities with unique internal processes, universities also established strategic partnerships to broaden the approach to

implementation and improve their collective performance. A network of health promotion representatives from traditional industry competitors shared ideas for enhancing employee health and performance. While this inclusive approach broadened the scope for program selection and implementation, concerns about the focus of decision-making remained.

Despite prioritising internal and external partnerships, the strong emphasis on establishing working groups and committees to govern implementation decisions proved problematic. These administrative structures set the strategic agenda and guided organisational values in relation to health and WHPP implementation. The obligation to account for financial results and to prove that program risks can be successfully accounted for, alienated employees and departments from ideas about health. Health clinic personnel from the case university attributed their limited influence on WHPP decisions to a lack of understanding about managerial objectives for implementation. Having a tightly controlled group of managers govern program implementation decisions also limited the opportunities available for employees to contribute ideas around selecting appropriate implementation strategies. Responsible employees were expected to provide information about their health and to choose to participate in relevant activities to maintain good health.

The potential for WHPPs to ostensibly align with SDG objectives while perpetuating marginalisation was evident in this case study. While the approach to governance and partnerships identified in this case study proved effective based on objective views of performance, a more inclusive approach to implementation could provide sustained improvements in health. Program decisions risk disproportionately benefiting selected groups of people and agendas (e.g., those people selected for committees prioritised implementation outcomes such as managing costs and risks), while other benefits, such as health outcomes, remained uncertain. Management reform is needed to embrace comprehensive WHPPs that account for people's complex

situation, ensuring that workplaces do not select WHPPs which they determine to be valuable. For example, WHPPs targeting objective measures such as weight loss are likely counterintuitive: effectively managing organisational costs and risks but not employee health: people of varying weights likely enjoy physical activity but respond to different health messages and interventions.[181]

Conclusion and Recommendations Relative to Sustainable Development Goals

While workplaces play an important role in achieving SDG objectives (protecting people and the planet), managerial tools for aligning business and social objectives are needed.[182] The HIRA framework provides practitioners and researchers with a useful tool to analyse the extent and nature of WHPP implementation. Using this framework to analyse the ongoing implementation processes of sampled universities proved that employee health emerges in relation to local contexts.[183] This finding has highlighted the importance of accounting for diverse interests that influence decisions about WHPP implementation. Despite evidence supporting the strategic benefits of these programs, their voluntary nature means that the motivation and quality of implementation approaches are not guaranteed.[184]

A cooperative and reflexive approach to management would allow the pursuit of SDGs transparently by consulting with employees on creating healthy and sustainable settings. In prioritising health,

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[181] McDonald, H, Gould, R, Delaney, D, Vecchio, V. 'An Investigation of the Health-Promoting Practices of Australian Universities'. *Health Promotion International*. (2021). https://doi.org/10.1093/heapro/daab004.

[182] Nugent et al., 'Investing in Non-Communicable'.

[183] McDonald et al., 'Investigation'.

[184] Thomas Parry and Bruce Sherman, 'Workforce Health--The Transition From Cost to Outcomes to Business Performance', *Benefits Quarterly* 31, no. 1 (2015).

organisations must invest in managerial arrangements that allow employees to contribute new ideas about program selection and implementation. For example, while promoting mental health and wellbeing (SDG target 3.4) entails systemic changes to organisational cultures and structures, personalised strategies to suit the circumstances of each employee are also needed. Thus, organisations should consult with employees about both the objectives and approach to increasing peoples control of their health. Providing employees with an understanding of the managerial tools used to support program selection and implementation is likely to improve the accountability and responsibility for health outcomes.[185]

The present research also motivates organisations to meet the objectives of SDG 17 by strengthening links between systems and structures for implementing WHPPs and the ongoing articulation of political agendas and goals. Implementation outcomes were improved through a cooperative approach to WHPP implementation between different universities. Such findings provide important feedback to organisations on negotiating and designing WHPPs that align with broader institutional objectives (like SDGs). Rather than providing a competitive advantage, sharing learnings between organisations will help to provide external assurance of the credibility of pursuing SDGs. Cooperation will ensure that investments into SDGs 3, 8, 10 and 17 become valuable and manageable to a broad range of organisations. For some organisations, understanding how employee health can be promoted with minimal cost and risk will be beneficial, while others may be more capable of leading change.

[185] Kickbush (1994).

Reflections and continuous learning

There are no fixed ways for universities to address the SDGs and contribute towards the achievement of relevant targets. TUA has taken an institution-wide approach towards accelerating the achievement of SDGs. As the goals are global, complex and interrelated, TUA has drawn on its unique philosophy, 'Be Good', to frame an integrated approach based on TUA's guiding principle of 'the power of people to connect the world for good'.[186] The Be Good philosophy establishes a foundation for collectivising institutional actions and targeting these towards making positive social differences. Embedding Be Good within learning and teaching activities makes it a relevant and transformational agenda for guiding staff and students across the institution. This chapter has focused on the development and application of research relevant to the SDGs with researchers focused on answering pressing problems, such as those posed by the SDGs. The Be Good philosophy dovetails with the SDG agenda. Notably, this philosophy steers TUA's research towards delivering social and economic solutions that positively impact people and communities. The research strategy, structures, and themes at TUA direct resources towards projects that will enact change and deliver meaningful and innovative solutions to ongoing challenges.

Lessons learned

There are many challenges in the process of steering a young, quickly growing, diverse and geographically wide-spread university (campuses in most major cities in Australia, New Zealand and China). Amassing contributions and aligning the research agendas of scholars can be a slow process. Research projects can take years from inception to evidence and can be waylaid by securing adequate funding, partners,

[186] TUA, *Social Impact Report 2019* (TUA, 2019), 3.

access to sites and data. The co-authors of this paper reflected on some of the challenges and learnings from the projects described herein. The following is a snapshot of wisdom gained:

- Communicating with and managing relationships with diverse stakeholders is essential. All the case studies described in this chapter involved multiple and diverse stakeholders; each with unique interests, motivations and desired outcomes from the respective project. Research that is positioned at the intersections of academia, industry, government, practitioner and participants requires advanced abilities to listen, understand and communicate in ways that are accessible, inclusive and respectful of each person and group. In practical terms, this meant writing emails, information sheets and presenting research results in multiple ways and forums. It also meant nurturing relationships of trust, including the investment of time and energy. Research projects, of the size discussed here, requires clear vision, strong leadership and attentiveness to communication that is fitting for different audiences.
- Another lesson learned is about defining the 'success' of a project in ways that make sense to the people and project involved. For example, in the Impact21 project, it was challenging to define success given that the program was meant to pursue a rich ecology of stakeholder goals: sustainable customised employment for participants, inclusive work environments for partner employers, program quality as defined by disability education designers and specialists, compliance with regulatory requirements for disability training programs as defined by the NDIS, and operational efficiency as defined by Inclusion Foundation. Since the writing of the Impact21 case for this chapter, TUA has partnered with Inclusion Foundation to develop a monitoring and evaluation framework that

captures what a multifaceted notion of success should mean and how it can be operationalised. Problematising assumptions of success and defining the success of a project in terms that are fitting for the project and its participants is essential to ensuring projects are truly inclusive and just.

- The previous lesson surfaces yet another learned; that research, by its iterative and evolutionary nature, is open for considering and re-considering assumptions that may have created limitations or barriers. As such, research can function as a vehicle for creativity, problem solving and innovation when it comes to addressing the very problems and issues the SDGs are designed to address. Sometimes, it is a change in thinking that can reveal a simple, yet effective solution not previously applied. Research projects, especially those where thought-leaders collaborate with industry leaders and practitioners create an environment ripe for innovation and leadership.
- People are experiencing financial inequality and expressing distrust in governance systems, leading to wealth and value gaps. Consequently, global plans for increased collaboration to solve social and economic issues (the stratagem of SDGs) are challenging to implement. Polarisation makes it difficult to allocate collective solutions to suit individual circumstances (or national solutions for ethnic cultures). Such reconciliation challenges were evident in research on WHPP implementation. For organisation's to be serious about employee health, managerial arrangements that allow employees to contribute new ideas about program selection and implementation must be prioritised. Here, generic or indiscriminate practices are problematic as people's health situations vary such as for working caregivers or employees experiencing personal challenges. Physical and mental health issues arise at any time

and affect people in different ways. Yet, gracious WHPPs that benefit employees experiencing difficult circumstance could be costly to employers thus creating tensions over equity and opportunity. Thus, regarding health, any pursuit of SDGs must occur transparently by consulting with employees on creating healthy and sustainable settings.

- Finally, setting SDG targets within a research project from its inception can only strengthen its ability to contribute to targets and indicators. As with the COBIN project, the initial goal was to prevent and treat blood pressure. The project was designed as a translational health research project where knowledge is taken from 'bench to bedside'. COBIN was not designed in terms of contributions to SDG in its original form, nor was this a driving force at the institution or for the lab at that time. It is only in retrospect that MacLachlan and his team can see the value of their work across a range of SDGs. It is through the fertile sharing across research cultures as well as the growth and translation of Be Good into TUA research that a multi-layered research objective approach has become visible and, thus, a practical possibility that researchers are adopting SDGs into their early project planning. MacLachlan is now championing the practice of SDG oriented clinical trial protocol papers. The power and innovation of this approach to trial protocol papers can, arguably, strengthen the contribution of such projects to attaining SDG targets.

As an institution, we are still developing our understanding and institutional approach to social justice. In 2022, we have engaged a formative think tank, in the form of a Social Justice Colloquium, where experts "unpacked" social justice concepts and open dialogue was facilitated. The complexity of agreeing to a definition of social justice, among respective scholars, is rife let alone to do so across diverse

institutional functions, philosophies and purposes. Yet, with the intent of defining a TUA stance on social justice and ways in which this can be interpreted into practice, the forty, or so, attendees engaged in respectful, robust and fruitful discussion. Admirably, TUA recognises that there is more to be done, from the macro to the micro, and has set forth an on-going plan to continue this work, deepen our collective understanding and commitment to social justice and SDGs as well as cultivate a spirit of Be Good and its legacy.

Conclusions

The case studies demonstrate how TUA's Be Good philosophy is contributing to realising UN SDGs through its research strategic agenda and endeavours. TUA research, in general, is underpinned by acknowledging the importance of SDGs pertaining to quality education (SDG 4), equity (SDGs 3, 4, 8, and 10) and social justice (SDGs 11) as well as being a driving force in shaping research in higher education. The Be Good principle has fostered, in TUA researchers, a broader understanding of the role of education to assist communities and the importance of higher education institutions to lead research that enables communities to thrive. Torrens University emphasises research that enables education and research-informed programs that encompass sustainability practices in workplace settings, outdoor spaces, health landscapes and spaces where situated practice and service provision is located.

The range of case studies showcase the critical importance that TUA places on meeting its commitment to achieving the SDGs. TUA aims to address disparity that impacts peace, partnerships, people, and their prosperity. How the Be Good philosophy of TUA is emanated in and through its research endeavours partner with the social, economic, and environmental concerns of the SDGs is illustrated below (see Table2).

Table 2. Torrens University Australia 'Be Good' Research and Case Study Research

SDG Foci	'Be Good' objectives	TUA research pillars	Case Studies	Integrated SDGs
• People	− Deliver impact for communities and individuals where most urgent and needed. − Transform lives through education. − Research of national and global significance.	Building Health Solutions People and Industry for impact	− Disability and meaningful education and work − Building sustainable health-research programs in Mozambique −Cardiovascular disease reduction in Nepal	− Good Health and Wellbeing (Goal 3) − Quality Education (Goal 4) −Partnerships for Goals (17)
•Prosperity	− Meet the highest social and environmental standards. − Focus on graduate employability − Volunteer expertise and services. − Ensure opportunity for all, including the disadvantaged	Security and Sustainability Societies in drastic change	− Progressing SDGs through wellbeing workplace initiatives	− Decent Work and Economic Growth (Goal 8) − Reduce Inequalities (Goal 10) −Sustainable Cities and Communities (Goal 11)

Despite the diversity of the research that is presented here, there are common threads that tie them together. Namely, all these studies hold as their central vision a world where those who have been underrepresented and underserved are recognised and efforts are made in all layers of social, political and economic strata to attend to the challenges they face. Overall, this not only aligns with TUA's Be Good philosophy and the SDGs purpose but also a commitment to humanitarian values of contributing to the health, sustainability and wellbeing of our precious and fragile planet. Each researcher and their teams demonstrate their commitment to the, sometimes, long and arduous work of making positive change however disparate, niche and small. There appears in the very act of 'doing' this research work the hope that from 'little things, big things grow'[187]. This maxim, fitting for a collective of culturally diverse (mostly) immigrant Australian researchers and drawn from the lyrics of a song about an Aboriginal's stand for recognition, also points to the power of everyday acts. In this case, the power of doing research.

The second thread apparent throughout all the case studies presented here is the immense collaboration of networks of people across institutions, cultures, and geographies to bring both the interventions and research to life. There is an inherent recognition that change, and the thought, planning and work required for change, is not a solo endeavour and requires the commitment and effort of many. The collaborations of each study illustrate the need to listen, adapt to and cooperate across much diversity; diversity that could, otherwise, be used to draw boundaries or incite competition. Each study required many to prioritise the vision of contributing to and effecting the attainment of SDGs before the social, economic or political gains of an individual or singular

[187] Paul Kelley and Kevin Carmody. From Little Things Big Things Grow. Wb Music Corp., Paul Kelly Music, Song Cycles Pty Ltd. 1993.

institution. When reflected on in this way, the individual and collective commitment of so many to the goals of the SDGs is inspiring and serves as a reminder that there is still much hope in these uncertain and challenging times.

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ECONOMY, LABOUR AND INNOVATION

4

CREATING AND COMMUNICATING VALUE THROUGH INTEGRATED REPORTING

FINDINGS EMERGING FROM ACTION RESEARCH IN FIVE EUROPEAN HEIS

Fiona Robertson

Keywords

Value creation; sustainability; strategic planning.

Abstract

If ever there was a time to conclude that Higher Education Institutions (HEIs) need to integrate sustainability into their strategic planning processes it is now. HEIs have been grappling with climate change for many years and it appears inevitable that COVID-19 will have an enduring impact on the way HEIs think about the value that they create for a range of different stakeholders. To be successful in this new, ever-changing world, HEIs will need to clearly identify the drivers of value in an academic setting and communicate how they create value for a variety of stakeholders both now and in the future.

This paper draws on the role that Integrated Reporting (<IR>) can play in strategic planning and enhancing connections between management practice, value creation and reporting. According to the International Integrated Reporting Council (IIRC), Integrated Reporting <IR> is the concise communication about how an organization's strategy,

governance, performance, and prospects lead to the creation of value over the short, medium, and long term. It helps to bring the different stakeholders of a HEI into the same arena when it comes to understanding impacts and outcomes and clearly illustrates the value created by an HEI in terms of multiple capitals. This is much deeper and wider than value for money. It is about understanding the relationships between the resources available to a university, the stakeholders impacted by the activities of the institution, and the consequent creation (or destruction) of value across multiple capitals.

Despite the clear benefits associated with <IR>, many organisations face considerable barriers associated with implementing the IIRC framework. In this study we use action research to explore and bridge the strategy-implementation gap in five HEIs in five different European countries as they seek to develop their first prototype <IR> as part of an Erasmus+ funded project (ISSUE). The analysis draws on data collected by each HEI including stakeholder analysis, various planning documents, questionnaires and qualitative data collected through a variety of face to face and e-meetings during the <IR> development period. The analysis draws on comparisons to identify similarities and differences between the approaches, analysis, and experiences of the participating HEIs. This research contributes to the improvement of the knowledge base associated with the understanding of the implementation of <IR> in an HEI context and provides evidence-based intelligence to inform practice and help to bridge the implementation gap*.

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Introduction

Integrated Reporting (<IR>) is the latest development in a long line of innovations which have attempted to improve the decision usefulness of corporate reporting (ICAEW, 2010). <IR> was developed in response to growing stakeholder demands for broader, more holistic and longer-term decision-useful information, compared to that provided by traditional corporate reports (de Villiers et al., 2017). <IR> aims to address the limitations of preceding corporate reporting models, highlighted by the 2008 financial crisis, which were historic, disconnected, and failed to consider the increasing relevance of intangibles and the dangers of short termism (Adhariani and de Villiers, 2018; Robertson and Samy, 2015). The need for a broader information set is clearly demonstrated by the small percentage of organisational market value now explained by physical and financial assets – down to only 10% in 2020 from 83% in 1975 (Ocean Tomo, 2020).

<IR> creates the potential to significantly improve the long-term health of corporations and the external environment they impact through consideration of the three indivisible and integrated dimensions of sustainable development, the economy, society, and the environment (Robertson, 2018). Additionally, <IR> can contribute to a sustainable society by providing the opportunity for organizations to respond to the UN Sustainable Development Goals (Adams, 2015; Adams, 2017b). However, some academics consider <IR> to be exclusively investor orientated with little to say about either accountability or sustainability (Flower, 2015; Milne and Gray, 2013).

Since the formation of the International Integrated Reporting Council (IIRC) in 2010, the concept of <IR> has increased in relevance and importance (de Villiers et al., 2014; Dumay et al., 2016), driven by an increasing recognition that globalisation, rapid technological advancements, increasing concerns around societal and environment

issues and the emergence of a knowledge based economy have significantly changed how organisations create value (Adhariani and de Villiers, 2018; Robertson and Samy, 2019; World Bank, 2014). In June 2021, the IIRC and SASB (Sustainability Accounting Standards Board) officially merged into the Value Reporting Foundation, in response to calls for clarity, consistency simplicity in the corporate reporting landscape. The Value Reporting Foundation is a global non-profit that supports organisational and investor decision-making with three key resources: Integrated Thinking Principles, Integrated Reporting Framework and SASB Standards.

Despite significant developments in <IR> over the last seven years and the potential for universities to be among the biggest beneficiaries of integrated thinking and integrated reporting, the annual reporting practices of most universities have remained stagnant. According to Adams (2018a, p. 332), university annual reporting practices 'are largely unimaginative and backward looking, consisting of compliance disclosures, financial statements and explication of governance structures and management teams with some unverifiable 'feel good' information thrown in'. Further, in contrast to efforts to develop 'integrated thinking' in the corporate world (Adams, 2017a), university structures and strategies remain locked in functional and discipline silos (notwithstanding some admirable attempts to develop interdisciplinary research) and a separation of the academic from the operational (Adams, 2018a).

While the <IR> field of literature is developing in the private sector, few studies exist on public sector organisations, especially universities (Dumay et al. 2016). Particularly, the IIRC vision of <IR> becoming the corporate reporting norm has been hampered by: lack of clarity surrounding definitions of <IR> and its key concepts; competing standards; balancing the interests of multiple stakeholders and lack of clear guidance on measurement systems and metrics for integrated

thinking and reporting (Robertson and Samy, 2019). This highlights the significance of this research which aims to gain insight factors that help or hinder <IR> implementation.

The analysis adopts Kotter's (1996, 2008) process for creating change and addresses a gap in the academic literature associated with the use of this framework in practice (Appelbaum et al. 2012). The study draws on data collected by each HEI including stakeholder analysis, various planning documents, questionnaires and extensive qualitative data collected through a number of face to face and e-meetings during the <IR> development period. The analysis draws on comparisons between and within institutions to identify similarities and differences between the approaches, analysis, and experiences of the participating HEIs. This study therefore addresses calls for future research that explores, at a more detailed level, interactions between single individuals or small groups in implementing or understanding the integrated reporting idea (Rinaldi et al. 2018). The study contributes to the improvement of the knowledge base associated with the understanding of the implementation of <IR> in an HEI context and provides evidence-based intelligence to inform practice and help to bridge the implementation gap.

Universities, Integrated Reporting and Kotter's 8 Steps Process for Change

Universities play significant roles in national and global economies. In the UK alone the 'traditional' higher education sector generated almost £35 billion in income in 2015/6, and its expenditure was £33 billion, with over £18 billion being used to employ staff. In the same year, the UK's universities educated and developed 2,300,000 students and generated £4.2 billion worth of knowledge exchange activities which demonstrates that universities have significant influence over a

large proportion of the world's future leaders, so they have the moral imperative to lead society towards a more sustainable future (Adams et al., 2011; BUFDG, 2017). However, universities are increasing operating in a highly competitive environment mainly owing to the decrease of public funding and a subsequent demand by their stakeholders for the effective use of public funding and greater transparency of information (Adams, 2018b, Veltri and Silvestri, 2015).

The sector is crucial globally, and it is therefore important for key stakeholders to recognise just how much they contribute to our society (BUFDG, 2017). According to Adams (2018a, p. 333), "if universities can figure out how they create value, and develop strategies which reflect dependence on multiple capitals and a systematic approach to identifying broader risks and opportunities, they might stave off government intervention in their affairs and reduce reliance on flawed approaches to ranking". At a time when all organisations who receive public money, either directly or indirectly, are under pressure to explain how they use that money effectively and efficiently, it has never been more important to be transparent about how universities operate (BUFDG, 2017). Further, as governments across the globe are committing to 17 Sustainable Development Goals, universities have a central role to achievement of these goals and may be held to account.

Indeed, public sector organizations such as public funded universities are held to higher accountability expectations than the private sector because they are legitimated through public contracts are expected to be accountable to the general public and specifically to citizens as taxpayers because they use public resources to produce public value for a wide and complex range of actors and interests (Mauro et al 2020). While they depend on financing from students, governments, industry and alumni, they do not communicate how they create economic, social and environmental value to these providers of finance in a systematic way (Adams, 2018a). According to Adams

(2018a), few universities communicate how their business model utilises and transforms multiple capitals (people, buildings, natural resources, relationships with stakeholders, systems and processes, as well as finance) to create value.

Particularly, <IR> offers the potential to: shift mind-sets towards alignment of economic gains with societal and environment wellbeing; improve the quality of information provided to stakeholders; promote sustainable business practices; and to provide the opportunity for organizations to respond to the Sustainable Development Goals (Adams, 2015; Adams, 2017b).

Several institutions are supportive of the development of <IR> in HEI. In the UK, the British Universities Finance Directors Group (BUFDG, 2016; 2017) and Advance HE has assisted and encourage UK universities to adopt <IR>. Further, in 2016, the International Integrated Reporting Council (IIRC) and the Chartered Institute of Public Finance and Accountancy (CIPFA) with the support of the World Bank published an introductory guide to explain to public sector leaders and their teams how integrated thinking and reporting can help the sector consider through <IR> adoption, how to make the most of resources, encourage the right behaviours and demonstrate to stakeholders how they are achieving the strategy and creating value over the short and longer term (IIRC et al., 2016).

The IIRC Framework (2013) includes stakeholder relationships as one of its guiding principles to enable organisations to be responsive to matters which are important to stakeholders, including economic, environmental and social issues, which also affect the ability of the organisation to create value. Although an integrated report is not a marketing tool, a well-written report can help explain to key stakeholders in the Higher Education system how universities create value for them (BUFDG, 2017). It enables organisations to engage in telling their value creation story. The <IR> framework provides a

principles-based mapping of the value integrators within a company. In clearly framing value creation in this way, the organisation has a better understanding of its value drivers and how and where value is created. <IR> can therefore drive organisational change toward more sustainable outcomes (Eccles and Krzus, 2014), and transform corporate processes (Phillips et al, 2011), resulting in the realisation of significant cost savings from issues ranging from systems design to energy expenditure.

<IR> is defined as 'a process founded on integrated thinking which results in a periodic integrated report by an organisation about value creation over time, and related communications regarding aspects of value creation' (IIRC, 2013, p.33). A sustainable society requires organisations, to have sustainable strategies, being those that create value for key stakeholders over the long term while meeting the needs of other stakeholders and not taking excessive or uninformed risks. (de Nuccio ,2020). <IR> facilitates the effective way of communicating an organisations performance in implementing a sustainable strategy to key stakeholders and acts as a discipline, through integrated thinking, to ensure the sustainable strategy leads to value creation in the longer term (de Nuccio,2020). According to the IIRC (2013), the integrated thinking and reporting cycle will lead to more efficient capital allocation, thereby enhancing financial stability and sustainability.

However, there are a range of social, economic, cultural, and organisational barriers to the production of an <IR>. For example, some studies have raised concerns about the ability of existing systems and processes to support <IR> (Macias and Farfan, 2017; McNally et al., 2017; Steyn. 2014; Stubbs and Higgins, 2014), resulting in high preparation costs (Chaidali and Jones, 2017) and impaired reporting quality (Chaidali and Jones, 2017; Gunarathe and Senaratne, 2017). The lack of clarity within the <IRF> regarding how economic issues should be integrated with social, and environmental matters, and difficulties in managing conflicting tensions between economic, social,

and environmental issues in balancing interests of multiple stakeholders in decision-making is also apparent (Giovannoni and Maraghini, 2014; Lodhia 2015; Parrot and Tierney, 2012). Dumay et al. (2017) argue that an unclear definition of <IR> coupled with vague definitions of the key concepts of 'integrated thinking' and 'value creation' are barriers to <IR> implementation. Additionally, some <IR> studies highlight a lack of clear guidance on measurement systems and metrics for integrated thinking and reporting (Dumay et al., 2017: Feng et al., 2017; Guthrie et al., 2017; Maroun, 2017; Robertson and Samy, 2015). These issues lead Dumay and Dai (2017, p. 574) to argue that 'a fundamental problem with <IR> is that the IIRC argues 'why' companies need <IR>, not 'how' to implement <IR>, and especially not 'how' to operationalise integrated thinking'.

Kotter's (1996, 2008) process for creating change is one of the most widely recognised models for change management and yet there are few case studies in the academic literature that enquire into how this process has been used in practice. (Baloh et al 2017; King et al. 2018; Wentworth, 2020).

In the introduction, <IR> is referred to as a journey which can be characterised as a change initiative which can be blocked at various stages (Dumay et al. 2017; Rinaldi et al. 2018). To start the journey and to overcome barriers to change in large organisations it may be necessary to pilot relatively small-scale initiatives to support major change (Campbell et al., 2011; Price, 1994). Kotter's (1996) process is typically depicted as a linear sequence of eight steps which can be summarised as follows:

1) Step 1: Establishing a sense of urgency because of an established need for change is essential for organisational change to commence
2) Step 2: Creating the guiding coalition to drive the change

3) Step 3: Setting a clear vision for the transformation initiative is the first task of the guiding coalition Develop a vision and strategy
4) Step 4: Communicating the change vision, the reason for change and the change method
5) Step 5: Empowering broad-based change - obstacles to be removed, structures and systems changed, competence and training in general
6) Step 6: Generate short-term wins to support the achievement of the longer-term change goals. Opportunities for rewarding those implementing change and the celebration of achieving milestones also assist to maintain the momentum for change
7) Step 7: Consolidating gains and producing more change - leaders need to provide evidence that change is working, and the change process needs to be invigorated with new projects, themes or change agents to maintain the momentum for change
8) Step 8: Anchoring new approaches in the culture by firstly, demonstrating to employees how changes in approaches, behaviours and attitudes have resulted in improved performance, and, secondly, that the new approach needs to be embodied in the next generation of management.

This process provides a framework for analysis and presentation of the results of our action research project.

Methodology

Integrated Reporting (<IR>) is an integral part of the ISSUE project which seeks to promote innovative solutions to sustainability in higher education. However, achieving IR is not a straightforward journey for many organisations as was highlighted in the literature review.

With these barriers in mind, we chose an action-oriented methodology to support implementation and to provide an opportunity to explore the problems associated with the development of ITR practice in HEIs in five different countries in Europe. The study adopts an approach that is significantly different from other forms of academic research in that it does not intend to create objective findings which can be generalised, but rather it aims to generate practical knowledge and act as a framework to develop new understanding, aid the implementation of innovative practice (<IR>) and identify good practice (Whitehead, 2005; Hind et al 2013).

This field of action inquiry comprises a family of different methods and methodologies including, for example, action research, participatory action research, action learning, action science and several other variants (Reason and Bradbury, 2008). There are commonalities between approaches where each is characterised by a repeating cycle of action and reflection, not only changing knowledge through action but also changing action through reflection and learning. A second commonality is that the process is subject to change and redefinition as knowledge becomes refined and enhanced through practice and a process of development founded on both action and reflection. Third, action inquiry is a collaborative process which places the researcher into an action-oriented relationship with participants.

Action research was chosen as an approach that is specifically concerned with social change and, more particularly, with effective, permanent change. It can be traced to Lewin (1958), who believed that the motivation to change was strongly related to action and that if people are active in decisions affecting them, they are more likely to adopt new ways of doing things. In action research, knowledge is produced in the service of action (rather than theory) and the approach has been extensively explored for both individual and organisational learning (see for example Revans 1982,1998; Coughlan and Coughlan, 2002). Eden

and Huxham (1996) argue that the findings of action research result from the involvement of members of an organisation over a matter which is of genuine concern to them, in this case <IR>. Positioned in contrast to traditional positivist research methods, there is a dual commitment in this methodology to study a system and concurrently to collaborate with members of the system in changing it in a desired direction.

Action research constitutes a rigorous and disciplined approach to knowledge and theory generation, intended to contribute to both the body of knowledge and to action in the service of addressing specific and real challenges. This was felt to be a particularly appropriate and relevant approach to use within the context of the ISSUE project as it engaged multiple actors in what could potentially become an organisation-wide reflective exercise with the possibility for building and enduring capacity for change to support< IR>.

This research may be further located in the interventionist research domain, where an intervention is seen as a response to a situation accompanied by an initiative to influence the situation (Baard, 2010). Interventionist research differentiates itself from action research through the notion that it occurs around one or more interventions, rather than requiring two or more research cycles. This study is based on a single cycle of action research resulting in the development of a pilot Integrated Report. In common with action research, interventionist research has two outcomes, that of a practice 'product' for the local context (the Integrated Report) and a knowledge contribution for the researcher (Baard, 2010). The researcher is often part of the organisation within which the research and the research process are taking place (Coghlan and Brannick, 2005) but also be an outsider sharing some responsibility for outcomes, providing useful knowledge to the problem solving process, whilst acting as a socially trusted outsider (Jönsson and Lukka, 2006).

The requirements of the ISSUE project need to create suitable conditions to address real organisational challenges in the field of sustainability reporting and to facilitate innovation to varying degrees in each HEI. The process needed to provide support and to collect reliable data for analysis to contribute to the broader body of knowledge about how organisations 'do' sustainability reporting. It required a collaborative relationship between participants and researchers within and across institutions. The lead researcher held some 'expert authority' based on their previous experience of < IR> which was transferred to research participants through a two-day workshop at the start of the process to introduce current theory and practice associated with <IR> development. The research design incorporated an element of coaching input by the research lead to support the implementation of the <IR> in each institution. Coaching can be defined as a process providing help to individuals, groups, and organisations through some form of facilitation activity or intervention (Beattie, 2014) and it has been aligned with action research in various contexts (see Ollis and Sproule, 2007; Hagen, 2010 as examples).

The action research process was outlined to research leads in each HEI and individual templates were developed to provide a structure for thinking, planning, and data collection. These templates supported key elements of the <IR> process including development of the Business Case for <IR>, stakeholder analysis and planning the action research project in each institution. The IIRC framework provided further information resources to support the development of the <IR>. Further data associated with the process was collected through reflection with participants at regular web-meetings and through an evaluation questionnaire at the end of the first cycle of action research.

Results

Step1: Establish a sense of urgency

The first stage in Kotter's eight step process is to create a sense of urgency and an awareness of the need for change. Kotter notes the failure to create a sense of urgency to be the single biggest error made when trying to change organisations. He suggests that change is often thwarted by complacency where few people see the need for change or are interested in working on the change problem. With urgency low, it is difficult to put together a group with enough power and credibility to guide the effort. Overcoming this complacency, rather than a desire for change, has been identified as more likely to be the norm in established organisations and considerable effort may be required to motivate organisational personnel to invest their time and effort and to put up with the inconveniences of change (Ansari and Bell 2009).

Whilst senior executives provide the strategic framework for action in an organisation it is often the middle managers in large organisations that foster and drive through innovations (Moss Kanter, 1983). Innovative ideas often require a champion from the lower levels of the firm (i.e. not board level) who is close enough to the necessary sources of information to help the idea achieve innovative results (Robertson, 2021). A sense of urgency was apparent to a lesser or greater extent in each of the HEIs participating in the study. Some had explicit support from executive management for the development of an <IR>, others had executive support to pilot the approach largely as a research endeavor. Each institution developed its own business case which made a persuasive argument for Integrated thinking and <IR>. When reflecting on the development of the Business Case it became apparent that most universities had already undertaken considerable and sustained analysis of the external environment and used this intelligence to pursue sustainability related goals in their teaching, research, and operations for several years. In some HEIs, sustainability was a key driver of activity

embedded in all aspects of organizational activity whilst in others there appeared to be gaps between supportive rhetoric, clear coherent strategies, and the reality of sustainability in teaching, research, and operations.

Several participants in the research were driven by the appealing notion of producing a single integrated report to satisfy the needs and requirements of several key stakeholders and the reporting requirements of various bodies. However, arguably the major driver of urgency within this overall context were the demands of an externally funded project and peer group pressure amongst a transnational partnership that provided the small teams producing the pilot integrated report in each university with a clear sense of urgency and motivation to act. Whilst recognizing that this would not have happened without the support of an executive coalition of very senior leaders at the institutional level, it was left to the middle managers to create a sense of urgency and initiate a guiding coalition.

Step 2: Create a guiding coalition

The second step in Kotter's process involves forming a group who have enough power to lead the change. Guiding coalitions for the development of the pilot integrated report were created at different levels in each institution. Each institution's executive management, rector or dean championed and supported the project. They provided legitimacy and strategic direction for a 'core group' that was established in each HEI to design and to drive forward the development of the pilot <IR>.

The core group in each HEI varied in composition, capacity, and number. In most instances the small core group of between two to five senior academics was tasked with producing a pilot <IR>. This group often contained members who were passionate about sustainability, drawn from a range of disciplines and interested in the potential

application of Integrated Thinking and Reporting in their own institutions and further afield. Executive leaders generally exerted a light touch on the thinking and reporting processes underpinning the development of the pilot <IR>. However, this group became more involved as the first draft of the <IR> was produced and reviewed. In all institutions, executive leadership support was critical in providing the vision and strategy that enabled the production of a pilot report. In addition, the executive coalition was a key source of support when roadblocks in terms of for example barriers to data collection and sharing had to be overcome.

Step 3: Develop a vision and strategy

Each HEI already had visions and strategies which reflected the sustainability agenda to varying degrees. These provided reference points to guide a variety of actions at the tactical and operational levels regarding the implementation of Integrated Thinking and <IR>. Whilst the visions and strategies were many and varied and unique, reflecting the individual organisational context, they all provided a supportive strategic context for the development of a pilot <IR>.

The guiding coalition in each university formulated a vision for the development of the <IR> which was associated with raising awareness and understanding of the sustainability agenda and promoting innovation through the application of Integrated Thinking and Reporting. This vision was generally accepted by executive leaders and many other internal stakeholders as it aligned with the trajectory of travel towards innovation and sustainability in each institution. However, it is important to note that production of the <IR> was an emergent part of the wider strategy in the participating HEIs rather than the strategy itself. Having said this, at least one of the participating HEIs used the process of integrated thinking to revisit and revise its vision and to refine its overall strategy at the School level. The experience is a good

example of an emergent rather than a planned approach to strategy (Mintzberg, 1994).

The action research methodology combined with project planning encouraged the development of an action plan to complement the vision and strategy in each organization. This provided a formal plan to guide implementation and was generally accepted to provide a useful tool, enabling each institution to map out its approach to data gathering, analysis and production of the <IR>. Templates were also used to support the mapping of key stakeholders.

Step 4: Communicate the change vision

The fourth Stage in Kotter's change process is to communicate the vision for change. However, he notes that managers often underestimate the amount of communication required to develop a consistent understanding, an effort which may be hampered by inconsistent messages, and lead to a stalled change implementation (Kotter, 1996). Participants reported that the action research methodology and the associated project planning when combined with the vision established in Step 3 provided a useful framework for the communication of 'the <IR> project'. In this instance, a targeted, planned, incremental approach was adopted to communicate the change vision and to engage members of each organisation in the <IR> development process.

Materials, in the form of a PowerPoint presentation were used to communicate upstream to executive leaders to provide an opportunity for them to influence the implementation of the project and support project governance. The vision and action plan were also communicated 'downstream' to other key internal stakeholders, particularly those who held data that was central to the value creation narrative. This involved considerable boundary spanning activity as the core team worked with others in different departments and schools to compile the data to support the development of Integrated Thinking and the strategic

narrative. In this way, awareness and understanding of the <IR> was supported through active involvement in the process by many members of staff.

Step 5 Empowering broad-based action

The fifth stage in Kotter's process involves removing obstacles to change, changing structures or systems that undermine the vision whilst at the same time encouraging innovative ideas (Kotter, 1996).

The materials (in the form of MS PowerPoint presentation) enabled each institution to map out its vision and approach to data gathering, analysis and production of the <IR> so that it was understandable to all involved. The Core <IR> team in each institution identified the information that was required and a range of 'data holders' that could provide it. Regular team meetings amongst the core project group and influential stakeholders created first drafts of the value model, monitored progress, and helped to identify any remedial action necessary or further opportunities for iterative development.

In many cases, senior managers in relevant departments were engaged and briefed about the project and were made aware of what was being asked of their staff. This line-manager support was often crucial in overcoming barriers to data collection and sharing. Core team members navigated organisational hierarchies skilfully and identified and engaged relevant stakeholders and, in this way, they managed to remove structural barriers associated with data collection and sharing. In some instances, the data was readily available, in others it required considerable mining, cleaning and analysis before it could inform Integrated Thinking and Reporting. In some instances, the data was centrally held in others locally. The core team talked to each unit individually and negotiated what data could be shared and when by. In most instances the core team did not have the authority to remove blockages but through persuasiveness, persistence, and discretion they were able to overcome barriers. Where they were unable to do so, the

core team had access to the executive coalition who could and for the most part did resolve such blockages.

The interactions between the core team, the senior leadership team and the myriad of data holders required to contribute to an <IR> inevitably engaged many people in the production process. Whilst a vast majority engaged positively a small number in each organisation were not able or willing to contribute within the first cycle of action research. The most common reason cited for limited or non-engagement was the 'pressures of other work'. Active encouragement from senior management helped to overcome obstacles of this type most of the time although some continued to struggle to collect and share data and knowledge in a timely fashion.

Step 6: Generate short-term wins

Short-term wins helped to demonstrate the viability of change and to build momentum for change. Kotter (1996) identifies that short-term wins need to be visible; unambiguously successful; and clearly related to the direction of change. Although not all researchers consider short-term wins to be a significant element in all change programs (Ansari and Bell, 2009), they did play a part in this project generating the momentum necessary to start the <IR> journey and to maintain the momentum to underpin the integrated thinking required to produce a pilot <IR>. Examples of short-term wins include audits of curriculum to identify sustainability content, value added through surfacing and communicating examples of good practice and identification of gaps in data collection systems, particularly for non-financial information.

The successful Erasmus+ project proposal (with associated income generation) provided resources to support the development of a pilot <IR>. This can be viewed as a quick win as it freed up staff time away from teaching to start the <IR> journey. The Core team's role was critical in identifying and communicating short-term wins, providing

feedback to the executive coalition and a range of managers and data providers which enabled them to see how their contributions supported the narrative being developed in the <IR>. The development of a pilot <IR> in each HEI may be viewed as a short-term win of its own accord. It was something new to all the HEI partners participating in the ISSUE project and has provided a 'worked example' of integrated thinking and reporting and a foundation for further development.

Step 7: consolidate gains and produce more change and Step 8: anchoring new approaches in the future

As the first cycle of action research reached a natural conclusion with the production of a pilot report, the challenges moving forward are reflected in steps 7 and 8. The pilot was viewed as a success by the executive coalitions in each university who sanctioned further work to continue to develop the pilot <IR> towards publication. Dialogue has been established with other influential stakeholders and the pilot is informing the thinking of relevant business units including Corporate Communications, Quality and Sustainability Offices in the HEIs. The analysis and integrated thinking underpinning the development of the pilot <IR> has identified gaps and opportunities to be further developed in a second iteration of the pilots.

However, the extent to which it the <IR> is seen to be a truly innovative approach or as a necessary way forward is mixed. In some HEIs, the institutional leaders are committed to the publication of an Integrated Report aligned with the requirements of the IIRC, in others the HEI's continue on a journey to 'integrate reports' drawing on but not fully reflecting the IIRC guidelines. In several HEIs the further development of the Integrated Thinking necessary for the <IR> is contested and there are tensions between top down and bottom-up approaches to strategy and innovation. The Integrated Thinking and Reporting process has supported the recognition of the value of new

performance indicators and provided evidence of impact on the sustainability agenda which need to be consolidated.

There is some evidence of anchoring Integrated Thinking and <IR> in the future (step 8) with new governance structures being established in some HEIs and existing structures being modified to oversee and steer the IR journey. In the longer-term, Integrated Thinking and Reporting is expected to foster a culture of collaboration and integration between different parts of the HEIs academic (research and teaching),operational and administrative areas.

To summarise, the following table highlights key learnings from the project:

What worked well	**Key Learning**	**What difficulties were encountered**	**Key Learning**
Senior Leadership backing	Support from the top must be championed to ensure the success of a project	Access to data	Systems may be manual, unintegrated, and fragmented. However, highlighting this can increase awareness of steps to improve the situation
Knowledgeable core team committed to the production of a pilot report	Training team members on integrated reporting and providing expert support will	Infographics capability	It may be useful to have an infographics expert on the project team or for an expert to

	improve the project outcome		provide training
Development and Agreement of a value creation model	Spending time considering how your organisation creates value enhances organisational awareness, focus and goal/ strategy setting.	Engagement of internal and external stakeholders (mostly limited by time, resources and competing priorities)	A project team dedicated purely to the project will ensure focus on the project with no competing constraints
Kick-started additional actions to support sustainability	IR highlights what drives sustainable value allowing organisations to consider further measures required to enhance value	Resources for design and presentation of the report	To save on time and resources, many organisations may wish to consider using independent report designers due to the expertise required in this area.

Discussion: Implications for Practice and Research

The eight-step process provides a clear indication of the actions to be taken to encourage change in an organisation and, when combined with action research and project management, it provides a vehicle to translate the high-level IIRC framework into practice. Some participants who had not previously led change initiatives found the process a useful reference point when planning <IR> implementation. These findings

resonate with those of Day and Atkinson (2004) who identified the role that Kotter's process can play in raising personal awareness about the range of factors that can be considered throughout a change programme.

Whilst many of the change initiatives adopting Kotter are reported to be successful, many have been characterised as failures (Jones et al, 2019). The eight-step process is clearly not 'ideal' and our experiences reflect criticisms in the existing literature. For example, Kotter (1996) states that the steps should be completed in a linear fashion and to skip steps will not produce a satisfactory result. Our experiences suggest that the process is much more iterative in nature with steps feeding forwards and backwards at various points in the process. An example of this was the generation of short-terms wins (step 6) in the form of a successful Erasmus+ project proposal (with associated income generation) that provided resources to establish a sense of urgency (step 1) and a vision for the change initiative (step 2) that was refreshed following the production of the pilot <IR> (Step 6).

Kotter also advises against making mistakes in any of the phases and warns that this will slow momentum and negate previous gains. Whilst in an ideal world mistakes would not happen; they often provide a foundation for learning and improvement of practice (Jones et al. 2019). All the participants assessed risks, managed problems as they arose and successfully navigated the process to develop a pilot report. In some instances, 'mistakes' were made through, for example, contacting a member of staff to collect data without informing their line manager. The core teams learnt from these experiences and adapted practice to ensure that the chances of them happening again were minimised. Our experiences reinforce the findings of other researchers noting a lack of flexibility to deal with the vast assortment of problems and issues that may be experienced during change (Sidorko, 2008). They also surface the democratic nature of some organisational change which are not adequately reflected in the Kotter model (Reissner et al. 2011).

The Kotter model and research associated with the implementation of <IR> generally identifies the key role that leadership from the top plays in successful change initiatives (Kotter, 1990). Indeed, senior management support was perceived as a critical factor for successful IR implementation in research conducted by Lodhia (2015). Senior executives must send clear signals to various parts of the organisation about the importance of new initiative to focus efforts toward the realization of organisational benefits, and lend credibility to functional managers responsible for its implementation and use (McGowan and Madey, 1998).

Emergent strategy as practice - discourse-based change management assumes that change cannot be managed in a linear, controlled, and top-down manner. Instead, it emphasizes that communication is an important lever to manage change and that this lever is not just available to a specific group of people but to a much wider group.

It has been claimed that emergent strategy and other change management processes describe what must be done but provide little detail in how it should be achieved (Pfeifer et al. 2005, p.297), and that it is not sufficiently detailed to guide change management in all situations (Appelbaum et al. 2012, p.775). The core project team in each institution demonstrated several core competencies required to develop an <IR>. All were able to present the business case for the introduction of <IR>, explain the fundamental concepts of value creation and describe the factors that contribute to the successful implementation of <IR>. The core team were able to work with key internal stakeholders to apply the fundamental concepts of value creation, the capitals, and the value creation process and to participate effectively as part of a team planning and coordinating the implementation of integrated reporting within their organization.

The evidence shows that breaking down internal silos creates the conditions for increased cooperation, the cross-fertilization of ideas and

new value-adding initiatives that can lead to new products and service lines (IIRC, 2020). However there remain inhibitors to the production and publication of an <IR> that need to be overcome if the initiative is to be sustained. For example, contested ground is associated with the extent to which the reports should be aligned with the IIRC, the nature of the information to be disclosed to external stakeholders (including assessment of risk), the selection of key performance indicators and the practical considerations associated with what to include and exclude from an <IR>.

Conclusions

This paper sought to consider the role that *Integrated Reporting* (<IR>) can play in strategic planning and in enhancing connections between management practice, value creation and reporting. The distinguishing characteristic is not whether the change was linear or cyclic, or whether it was top-down or bottom-up change. The distinction being made is between viewing change as one cohesive process or the sum or many coordinated Processes. In most HEIs there are many different stakeholder groups involved in delivering change; from the many guiding coalitions to project teams delivering individual pieces of work. These different groups start the change process at different times, and multiple concurrent instances of process are needed. To engage with stakeholders required context-sensitive communications Kotter's description of the Process does not make explicit allowance for this. Nonetheless, the Eight Stage Process was found to be an accurate description of the change process at the individual group level.

However, these criticisms need to be tempered by Sidorko's (2008, p.316) observation that "…no single model can provide a one-size-fits-all solution to organisational change."

The Process was also used to facilitate change in an aerospace industry study presented by Day and Atkinson (2004). In this case, the Process was used as a planning tool and to communicate the nature of the change to procurement functions in the early stages of the change program. However, the practitioners in this case study had limited success using the Process as a guide for future action, finding the Process to be of "…limited use over and above the raising of personal awareness about the range of factors that are to be considered throughout a change programme…" (Day and Atkinson 2004, p.266).

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5

FINDING A VOICE: SDGs, ETHICAL IDENTITY AND THE CURRICULUM

Simon Robinson and Adalberto Arrigoni

Keywords

Education research; ethics teaching; SDGs; Ethical identity.

Abstract

The first part of this chapter briefly examines SDGs education research suggesting that – even though a wide range of initiatives in the field of responsible management education have been put in place – the level of integration of responsibility and sustainability into professional and managerial education/HE is still insufficient. This is reinforced by research into professional ethics which suggests that recent graduates do not effectively identify with the ethical values of organisational or professional ethics, and thus have little commitment to such values in practice. This leads to a focus on the key modes of responsibility, and the three practices which undergird the development of responsibility: deliberation, narrative development, and dialogue.

The second part sets out the principles behind an integrated approach to ethics teaching in HE, which focuses on the practice of responsibility, accountability and creative responsibility, as key to learning in general and to ethical development in particular. This is embodied in pedagogy

for critical moral consciousness focused in: critical reflection; holistic decision making; dialogue (engaging complexity and difference); mutual accountability; and the exercise of the moral imagination. These stresses *both the* development of ethical autonomy *and* positive engagement with plural community (be those professions, institutions, such as universities, or intermediate organisations such as religions) but also the nature of learning. This also from the basis for leadership at all levels of the organisation and beyond.

The third and largest part of the chapter will set how ethical identity can be developed in the curriculum, involving a fourfold strategy and related examples of teaching:

- Establishing with the parent university key curriculum outcomes focused on responsibility and key ethical virtues. This will detail how virtues such as courage relate to intellectual and psychological virtues, and thus to employability.
- Developing ethical teaching based in identity, with modules or parts of modules over three years focused in student identity, professional identity, global identity, and how these relate to personal identity.
- Developing pedagogy which focuses on the practice of mutual dialogue and decision making. The pedagogic examples will include student dialogue with university administrators, different professions, and community stakeholders.
- Developing integration with the other modules in the curriculum, e.g. through focus across modules on the same professional decision making frameworks, and skills of reflective practice.

The examples given will focus on a holistic view of professional practice and ethics through reflection on identity and practice, offering

an account of how ethical behaviour can be motivated in the learning environment, and link directly to the SDGs*.

Sustainable Development Goals

The broad argument of this chapter is that the focus on developing SDGs in the curriculum is necessary but not sufficient. SDGs were prompted by the UN conference on SD in 2012. In September 2015, 17 goals and 169 targets were adopted across complex and holistic interlinked social and environmental challenges. The aspiration is to transform the world order. This would require a social and economic paradigm shift, away from development aid and to multi stakeholder partnerships, social investment and ethical trade. The interconnected framework is summed up in the five words, Planet, People, Prosperity, Partnership and Peace (UN Foundation 2019). In effect, this profoundly ambitious enterprise is suggesting the development of global shared responsibility for health, education, economic development, peace and so on. There are problems with such a vision.

First, the agenda for change has been set, with a deadline of 2030. This feels like project management, but the breadth of SDGs has been criticized for being inconsistent, difficult to quantify, implement and monitor (cf. Swain 2017); the very opposite of a successful project focus. Already the World Economic Forum is stressing a major financial

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shortfall, not least because of the need to develop infrastructure that would enable the vision to take shape (Cooper 2021)

Second, the goals are non-binding. Each country is expected to create their own national or regional plans, without an effective framework to manage this, or clarity about the financial resources and investments required. Third, underlying tensions between the different goals soon emerges, not least between the socio-economic development and the environmental sustainability goals. The tensions themselves reflect a social and economic environment which is volatile, uncertain, complex and ambiguous. This suggests that the idea of a simple paradigm change, whilst admirable, is utopian, a kingdom of heaven, or even 'cloud cuckoo land' (Aristophanes, 2003).

The important underlying discussions are about responsibility, at local, national and global levels, and about how leadership, at all levels, can enable those discussions and develop creative and shared responsibility in complex and difficult environments. The paradigm cannot come alive without an exploration of responsibility and how far we own the connected values and can work together to embody them. The challenge for Higher Education then is not to simply champion the SDGs, but rather to explore and enable the responsibility and leadership which underlies them.

From this point of view, it has been correctly pointed out (Moratis and Melissen, 2021) that most initiatives in the field of responsible management education tend to be based on an "issue-based" content perspective, that envisage SDGs as an umbrella framework underlining the importance of *discussing* sustainability as a new "opportunity" for achieving localized, opportunistic and only partial incremental progresses in teaching and research - if not more cynical, bluewashed gains or profit for businesses and corporations.

On the contrary, if SGDs are to represent a challenge that requires *transformational change* with crucial consequences for the role and ultimate function of HE in society (*idem*, pp. 3-8), then:

a) the trade-off and tensions between seemingly contradictory goals and domains that the "sustainability paradox" involves and highlights should be seen not just as adjustable and secondary aspects within a "business-as-usual" instrumental view (which sees ecological quality and social justice conditional on economic success), but rather as a possibility to integrate new narratives expanding the orthodoxy of the "green growth" discourse (e.g. post-consumerism, etc.);

b) the crisis of a certain kind of responsible management education - which fails the "heart and soul" of graduates and does not successfully generates ethical habitus - can be overcome as educators and academics see themselves as *phronetic* leaders promoting a systemic activism which (far from being non-neutral and ideological) can: identify windows of opportunity to shift logics and mindsets; create meaningful connections between different networks; support new deliberations on old problems; nurture and illuminate innovative and ground-breaking visions;

c) HE has the responsibility to encourage students to engage in self-care: while the ambition to "change the world" can trigger strong emotions such as anger, ecological grief and anxiety, the passion of facing inconvenient truths about human suffering and natural degradation can pedagogically drive an embodied and integrated teaching and learning approach where the boundaries between the self, the others and the physical world can be critically revisited. Accepting that responsibility- and sustainability- related education comes with an emotional involvement can help HEIs understand how students feel about the state of the world and the SGDs challenges, and this – in turn – define their role better.

Responsibility and HE

There is some evidence that responsibility in the curriculum is not very effective. On the one hand, it can be argued (Kaul and Smith 2012) that exploring the meaning of responsibility is a challenge, and implies dealing with a concept extremely difficult to put in perspective and categorise. As a consequence, the (pre-)comprehension of what "constitutes" responsibility is unclear and variable across the students and educators, with the former and the latter facing dissimilar challenges (working? Studying? Pursuing the Common Good?); since "responsibility" is a multi-layered notion, it is often difficult to distinguish between internal and external factors and narrower and wider levels (local/personal vs universal responsibility); there can be "communication barriers" about mutual expectations and joint objectives.

In other words, it seems challenging to defeat those rationalising narratives that see "sustainability", "sustainable development" or "corporate responsibility" as instrumental tools where addressing ethical challenges may lead to some sort of business or economic value, in a vision where self-interest and domination rule in global, institutional and organisational contexts.

On the other hand, it seems equally demoralising to embrace an unassuming and unpretentious posture, where HE gives up this educational responsibility, which can lead to a de-professionalisation where incompetence or carelessness can be worse than greed. Academic practice cannot go without its intrinsic epistemic and methodological commitments that provide the fundamental structure of a disciplined intellectual and professional practise.

This is further reinforced by Gill's (2011) research about junior, recently graduated, accountants and their awareness of responsibility and related values. It suggests that the dominant discourse in accounting 'does not take ethics particularly seriously' (Gill 2011, 123). This is

shown up in several different practices which appeared to be an unquestioned part of the work culture, such as phantom ticking (of unchecked data), and ignoring Chinese walls set up when two or more firms are bidding to buy another company. They recognized that it was wrong but did because 'everyone else does it'.

There is a juvenile tone to the responses which treats these actions as, in the participants' words, 'minor felonies' (Gill, 2011,121). In other words, the actions are trivialized. Central to this is the implication that the persons who do this are not fully responsible for their actions, or perhaps that others are responsible for them. The research participants also perceived ethics as dogmatic and judgmental, and as a result did not take the idea seriously, indeed assumed that nobody did. Hence, their response to questions was characterized by confusion, equivocation, obfuscation, and the use of technical rather than value language (cf. Bauman 1989). The research also showed lack of responsibility for articulating values. One participant (Gill,124) is able to speak of his 'own' ethics, but also being able to 'flex' his ethics. As Gill writes this seem to render ethics as 'something external to himself, which he can work upon' (Ibid.). Other participants spoke of the declaration of values making them vulnerable, 'which is not necessarily the best thing in an aggressive corporate atmosphere' (Ibid, 125).

In both cases there was a reluctance to identify the self with values, or to give and account of that identity, despite having gone through ethics training in the firms. One participant showed the development of connecting values to her own self, comparing the experience of the research questions to psychotherapy (Ibid. 127). The lack of identification became even more pronounced with respect to the term corruption. First, participants recognized that there was a grey area between corruption and their practice. However, they felt it was important not to reflect critically on this opacity. Second, some participants tried to characterize corruption as extreme, such as

briefcases full of cash offered. The point here was to distance themselves from such acts (126). Third, nonetheless, they could envision themselves as crossing the line if pressure was brought to bear from a superior (127). Fourth, some participants (126) suggested that thinking of ways to get around the Finance Act every year could be viewed as 'border-line corrupt', but that such acts were a key part of their professional life, reinforced by messages from 'the top'. At no point did the participants identity a sense of leadership in their own behaviours.

Responsibility and the SDGs

The focus on identity and responsibility then suggests the development critical thinking, not least about the value we own, and a sense of relationality and shared responsibility. Orr (1992) draws some of this out in his idea of ecological literacy. This rests on six foundations: all education is environmental education; environmental issues cannot be understood through a single discipline; environmental education requires dialogue with place; process is as important as content; experience in the natural world is essential to understanding it; and education for sustainability requires the understanding of natural systems. Awareness of place, especially, is focused in relational identity, and a sense of belonging.

Tilbury and Wortman (2004) argue that there are five essential skills necessary sustainable development education: envisioning, critical thinking and reflection, systemic thinking, building partnerships and participation in decision making. Developing such skills still assumes some sense of ownership on the part not only of the student but also in the community of learning which provides professional or educational identity. Jonas (1984) argues that the development of responsibility lies at the heart of such ownership, and responsibility can be viewed as three interconnected modes: agency; accountability; and positive or creative responsibility (Robinson 2016).

Agency involves taking responsibility for critical engagement with perspective, purpose (and related sense of worth), core principles, and practice and its effect on the social, cultural and physical environment. This is core to the development of autonomous agency (Taylor 1989), in effect self-determination. The question of attributability is at the heart of this and how far any of our thoughts and actions are determined by other forces or by ourselves. For the most part the debate about this recognises that there is no total freedom or determinism, and that autonomy involves continued reflection in relation to social and cultural context that we both shape and are shaped by (Fischer and Ravizza 2000, Robinson 2011). As Haidt (2013) notes, one of the most powerful forces in undermining autonomy is cultures with narrow worldviews, where critical reflection on personal and organizational assumptions is discouraged. One's thinking and practice is literally determined by what others think, leading unquestioning reinforcement of assumptions, rigid orthodoxy and isomorphism (Thompson and Bevan 2013).

Accountability involves taking responsibility for giving an account of purpose, principles and practice to the self, to the organization and to others. Focused in ongoing critical dialogue this enables a continual testing of organizational narrative (cf. Brown 2005, Fawkes 2104), and the development of plural and mutual accountability. For example, a member of any organization may be accountable to: the organization which pays them; its customers; suppliers; her professional body; regional bodies such as the chamber of commerce; various other stakeholders; and so on. Narrow organisational culture focuses on limited accountability, tuning out the wider stakeholder narratives. In the most extreme cases (cf. Francis 2013) questioning from such stakeholders is viewed as threat to the organization. Such a dynamic also ignores mutual accountability. Partly because of power imbalance accountability tends to be one way, upwards to the leaders, with little accountability downwards. This means that leadership tends not to be

open to questions from below, and therefore not genuinely accountable (Thompson and Bevan 2013). Critical to any sense of mutual accountability is a sense of shared responsibility across the organisation for purpose, principles, projects and place (the material environment of the community and beyond).

Positive responsibility is focused in shared responsibility for ongoing critical reflection on purpose, principles and developing creative response in practice, including the negotiation of responsibility, individual, plural, shared and mutual (Ricoeur 2000). The focus is on creativity and the exercise of the moral imagination, looking to the development of possibilities (Biss 2014, Lederach 2005), enabled by engaging different perspectives and sharing responsibility (cf. Jonas 1984). Leadership enables critical engagement with the different narratives through the ongoing practice of dialogue, developing individual, and organizational responsibility.

At the heart of these modes of responsibility is awareness of the effects of one's actions, in relation to targets and the social and physical environment. None of this prescribes a particular response. What the effect of any action is or might be will vary from case to case. However, responsibility still demands an awareness of how those actions have affected or might affect the other. Of course, any awareness of actions, consequences and the social and physical environment is not value free. On the contrary, core values will tend to determine how we see the world (Robinson, 2008), and very specifically what we exclude, i.e. what we deem not to be of value (Bauman, 1989). Bauman argues for the importance of plurality, precisely because this enables different perspectives to challenge any dominating or totalizing narrative. Hence, it is critical that core values as well as practice be subject to critical reflection.

Jonas (1984) argues for a sense shared responsibility for a common environment. For Bauman (1993) and others this involves taking on an

attitude of universal responsibility, demanding constant reflection and learning. As Bauman (1993) suggests, it also means that the moral self cannot rest content, something shared with the Islamic concept of hizmet or service (Robinson 2017).

The different modes of responsibility then are interconnected. Without meaning you cannot know what you are doing. Without practice you cannot know what you are talking about. Without value you cannot appreciate what you are talking about or doing. Each element is necessary if responsibility is to be taken and sense made. This relational view of responsibility also provides strong grounds for the compatibilist view of freedom and determinism (cf. Fischer and Ravizza 2000)). Freedom is partly a function of knowing what one thinks but also knowing how one is connected to, and might relate to, the social and physical environment. It is also a function of different perspectives that help the person to reflect and take increased responsibility for meaning and action.

The three modes of responsibility are focused in three practices: deliberation, narrative development, and dialogue.

Deliberation. Taylor (1989) argues that decision-making constitutes self-identity. This is a social function, involving awareness of other comparable approaches, enabling comparison and awareness of wider possibilities. Deliberation involves a conscious effort to critically examine assumptions about [purpose and associated understandings of the worth the individual and organisation, core ethical values, and the effect of practice on different stakeholders.

Narrative. As Ricoeur (2000) argues, conscious narrative development enables a sense of authorship, taking responsibility for meaning and practice (cf. Calhoun, 1995). Narrative enables 'distanciation', an epistemic distance from the self (Freeman 2015) 'a separation of the self from the self, such that the text of one's experience becomes the object of interpretation' (cf. Ricoeur 1992), leading to the

possibility of dialogue *with* the self *about* the self, enabling the development of meta-cognition and mindfulness (Flavell 1987). Seeing the self 'as another' (Ricouer 1992) enables critical questioning not simply of ideas but also how we perceive and appreciate ourselves and the wider social and physical environment and thus of our underlying view of value and worth. Such internal dialogue with the different relational narratives involved in the complex and plural self (Hermans 2012), reinforces commitment to the developing self over time, and engagement with and resolution of contradictions and inconsistencies in the self. Re-presenting the self then is an ongoing, cyclical process of critical reflection and self-development, providing a residual sense of identity (Ricoeur 1992).

Dialogue. Dialogue with others amplifies the internal dialogue (Bakhtin, 1984). This also involves distanciation, enabled by the capacity of the other to listen, the practice of equal respect, and by the others' re-presentation of difference (Bakhtin 1984). The presentation of different perspectives challenges the person to re-examine their own and the others' perspectives, sense of value, related ethical values and practices, both in terms of different ideas, attitudes and possibilities. This reinforces and develops the broader value of the developing narrative, individual and shared, locating such value beyond the narrow group, and focused on shared value (sense of worth) and ethical values.

These three practices are not simply the means to responsible thinking, they embody it. Dialogue for instance, especially unrehearsed (Oakshott 1989), has immediate and personal transparency. As Bahktin (1984) suggests, dialogue is ontological, focused on openness to personal encounter, not simply to conversation *about* rational ideas. Sacks (2007) uses the term *Zwischenmenschliche* (genuinely interpersonal), suggesting that such dialogue does not attempt to change the other, but leads to mutual learning and development. This enables: the development of trust; the taking of responsibility for critical

reflection by all those involved; mutual communication; and creative response to the wider social environment (Zappen 2004).

Responsibility and the curriculum

Focusing on this wider sense of responsibility in the curriculum can enable the development of identity and a sense of active and creative belonging for the student. Embedding the three modes can enable holistic integration of: the moral and practical; cognate concepts and disciplines; occupational utility and values; virtues and skills; values and learning; and reflective practice. All of these enable deeper appreciation of the SDGs and motivation to lead their development.

Integrating the moral and practical

To begin with it links core intellectual capacities to moral and practical capacities. Many higher education writers argue for these as quite distinct. Graham (2007), for instance, argues that the core purpose of HE is to develop the critical intellect not ethical virtues. In one sense, the idea of responsibility affirms the importance of the intellect, knowing what one thinks and being able to rationally account for and justify this. However, even the critical intellect is not value free. It stands out against uncritical thinking, and is based in the development of autonomy, in effect agency. Moreover, as Aristotle suggests the key virtue of *phronesis* (practical wisdom and effecting judgement) is central to ethical reflection (the capacity to reflect on purpose and its embodiment) and is itself an intellectual virtue. Solomon (2007) notes that rationality is not made up of simply cognitive elements. Reflection on purpose includes a sense of worth and identity and thus has strong affective elements (Cowan 2005).

Integrating cognate concepts

The focus on responsibility is an effective way of integrating the many different cognate areas including: social enterprise, citizenship, sustainability, social responsibility, volunteering, and so on. All, conceptually and practically, are focused on responsible thinking and practice. It also provides a strong link between the different professions and disciplines that make up business and connection to the wider social and physical environment.

Integrating occupational utility and values

This also begins to provide a bridge between occupational utility and the curriculum. The stress in much employability work (Yorke, 2004) has been on practice-centred skills, rather than values or the intellect. Employers suggest that a number of task-centred skills go to make up employability, including: effective-learning skills, self-awareness, the capacity for networking, negotiation skills, transferable skills, self-confidence, interpersonal skills, team-working skills, the capacity to make decisions, and the capacity to cope with uncertainty (Yorke and Knight, 2004). Yorke and Knight (2004, p. 5) argue that employability is a more complex construct, involving four interrelated components:

Understanding, This is intentionally differentiated from knowledge, signifying a deeper awareness of data and its contextual meaning.

Skills. This refers to skills in context and practice and therefore implies the capacity to use skills appropriately.

Efficacy beliefs, based in identity self-theories, and personal qualities. The connection of these to a sense of underlying purpose and value enables the student to feel that it is possible to make a difference in work and influence how the person will perform in work.

Metacognition. This involves self-awareness, the capacity to learn through reflective practice, the capacity to reflect on learning itself, and so learn how to learn, and the capacity to regulate the self. Such employability is evidenced in the "application of a mixture of personal

qualities and beliefs, understandings, skilful practices, and the ability to reflect productively on experience." (Yorke, 2004, p. 11). These involve:

- reflectivity, including the capacity to reflect holistically and to learn;
- responsibility, involving the capacity to identify and articulate self-beliefs, and be responsible for these beliefs and their development, and related actions;
- connectivity, involving the ability to make connections between: experiences over time; the self and its core communities, including work; and the social and physical environment outside such communities;
- innovativity, the capacity to both handle new challenges and create new opportunities. This recognises risk and initiative as an inevitable part of the work experience, summed up partly in the idea of entrepreneurship.

This is further amplified by Mustakova-Possardt (2004, p. 245), who also connects responsibility to both world views and awareness of the social and physical environment in the idea of "critical moral consciousness", summed up as:

- a moral sense of identity;
- a sense of responsibility and agency;
- a deep sense of relatedness on all levels of living;
- a sense of "life meaning or purpose", linking to underlying beliefs.

These connect to core intellectual values, not least the development of rational agency, moral values, spiritual values[188], and competency

[188] Spirituality here is used a generic term pointing to underlying beliefs about the world, sometimes expressed in terms of worldviews.

values, not least professional and technical skills and values, from communication, to teamwork, to concern for excellence. If the connections between the different modes of responsibility hold good, then it is reasonable to conclude that all these value levels are interconnected. Intellectual values provide the critical perspective from which to test and develop the other values, whilst moral and spiritual values directly test intellectual values. Finally, both sets of values directly inform and positively affect competency values. It follows that responsibility as outlined above is central to effective decision making and monitoring of practice, and thus to any view of employability.

Linking virtues and skills

Responsibility is also linked directly to virtues. Ladd (1991) and Calhoun (1995) argue that responsibility is itself a virtue. Equally, virtues might be seen as necessary for the development of responsibility. Focusing on the Aristotelian virtues of justice, courage, temperance, patience, and practical wisdom (*phronesis*) it could be argued that these enable responsibility to be taken. MacIntyre (1990) argues that the virtues of learning are justice, courage and honesty. This challenges Higher Education pedagogy to focus on the practice of judgement and practical wisdom (Barnett and Maxwell 2009), dialogue and co-creation, rather than simply intellectual content, and thus the practice of all of these virtues. MacIntyre (1981) also suggests that the virtues are internal to the good, the underlying purpose and worth of the organisation. It is important then to articulate the virtues and how they connect to skills in the practice of responsibility. Articulation means including virtues in the desired outcomes of modules, not least practical wisdom (Barnett and Maxwell 2009). This is seen by Aristotle as an intellectual virtue, involving reflection on, and appreciation of, purpose, and the relation of this to practice. The practice of responsibility leads the integration of moral, psychological, intellectual, and practical virtues, including: *moral*, such as justice, respect, patience, and temperance; *psychological*,

including empathy, humility, trust and hope (Miller 2003); *intellectual*, including practical wisdom (*phronesis*); and creative/practical, including imagination (Lederach 2005, Nussbaum 1990). Each of these connects to skills and deepens personal and professional development. A good example of this is empathy, connected directly to listening skills and broader communication skills. Empathy is focused in attentiveness to and the capacity to identity with the other. Without this it is hard to really hear and value the narrative of the other. Far from enabling closeness it enables epistemic distance, thus a clearer view of the situation, and the other, as well as the self, unclouded by preconceptions. As such it is important to the development of professional disinterestedness, focused on honesty, realism and the key professional purpose. Keats's (cf. Ou 2009) capacity of negative capability is close to this, a virtue that enables person to stand art from competing claims and help this involves focus on underlying truth.

Dialogue and the practice of learning

The development of three modes of responsibility, and practices, enables the development of critical and holistic thinking, echoing Barnett's (1990) dynamic of 'higher learning' which frees students and staff from the narrow focus of the disciplines (Bender 2005), transcending and connecting them. This develops a sense of identity which relates to complexity, and ambiguity as well as uncertainty. This desire for such complex identity is supported by the evidence of students themselves, for instance, in the UK National Union of Students Survey on sustainability skills (Drayson et al 2014). Over several years this found that a large majority of students believed that sustainable development, and the learning of related skills, should be actively promoted and incorporated by universities into the curriculum. The survey showed that a majority of students identified themselves as active participants in society, sharing responsibility for the social and physical

environment, and not buying into narrow instrumentalist or positivistic approaches to Higher Education or to work. This reinforced the connection of cognate concepts noted above. Katulushi (2005) extends this to student identity as global citizens, not least through interaction with the different cultures in the university community.

Key to such developments is handling difference and learning is also focused on dialogue and the appreciation of different narratives and narrators (Bahktin 1984). Oakeshott (1989, p. 101) argues that the distinctive mark of a university is a place where the undergraduate "has the opportunity of education in conversation with his teachers, his fellows and himself, and where he is not encouraged to confuse education with training for a profession". It is in the critical conversation that students hear different voices and begin to learn how to mutually test and challenge the different accounts. For Oakeshott (1989, p. 13) this conversation is an "unrehearsed intellectual adventure" that enables responsibility in four areas: (1) reflection on the wider meaning of any project; (2) development of the capacity to challenge whilst remaining committed to people and projects; (3) awareness and appreciation of the many different values perspectives in any conversation; and (4) a sense of interdependence in learning. The practice of mutual dialogue then enables the development of critical self-reflection, the capacity for mutual challenge and support, and the development of identity which is complex and creative. Ford (2003, 23) focusing on the importance of collegiality as 'intensive, disciplined face to face conversation and debate between contemporaries and across generations.' The mutual nature of such critical conversation is strengthened by much of it not being rehearsed (Oakshott 1989). Unrehearsed dialogue makes accountability for thoughts and feelings immediate.

Dialogue centred pedagogy effectively enables greater accountability and openness to the challenges of different voices in and beyond disciplines. Nussbaum (1990) notes the importance of literature in

enabling critical reflection and dialogue about identity, and the practice of the moral imagination (cf. Biss 2014). Such dialogue also enables critical reflection on plural identity of the self and others. As Ford (2003) suggests, this can involve the institution, different professions, different disciplines and so on. This extends Oakshott's thinking to include professional identity. Professions also focus in the handling of complexity, and professional development is a key part of Higher Education. This elevates what is often seen as the narrow area of professional reflective practice

Reflective Practice and dialogue

Schoen (1983) suggests that this involved "reflective conversation with the situation", and outlined a process including:

- The analysis of the situation in order to work out what the problem might be and what issues are involved.
- Noting "appreciative" or value systems that help to find significant meaning in the situation.
- Noting overarching theories that might provide further meaning. . An understanding of the professional's own role in the situation, both its limits and opportunities.
- The ability to learn from "talkback". This involves reflective conversation about the situation.
- Treating clients as reflective practitioners. Such a framework can be and is applied to most professions.
- Gibbs (1988) provides another simple framework which takes account of the emotions as well as ideas in reflection:
- Description: What happened?
- Feelings: How did you feel about the situation?
- Evaluation and analysis: What was good or bad about the situation?
- Conclusion: What else could you have done?

- Action plan: If this arose again what would you do? None of this is value free, involving: the person taking responsibility for his/her own ideas and values, and how they relate to practice; responsiveness to the situation, enabling dialogue with the client and stakeholders; awareness of the professional's role, resources and limitations; respecting the autonomy of the client; and the importance of continued learning.

Reflective practice also discovers value in context and identity. The professional engineer, e.g. finds value in her role and purpose, and how she relates to client and stakeholder. Reflective practice is not individualistic but rather focuses on the community of practice and its meaning. It involves critique not simply of practice, but also of the meaning and purpose of that practice, embodied in different traditions/communities/institutions.

Such reflective practice is one way of insuring against polarised thinking and inability to appreciate empirical truth in any situation. Entine (2002), for example, notes how narrow defensive identity can lead to the inability to appreciate data. He notes how Greenpeace in dispute with the oil industry focused on subverting North Sea activities even though empirical evidence suggested that this project was the most sustainable way of dealing with the issue. Greenpeace later accepted that the data offered by the Oil Industry was correct but still said that they would have done the same.

Responsibility and motivation

Focus on responsibility is intrinsically motivating. Research suggests that focusing motivation on financial rewards is effective only up to a point. World Bank research (Pink 2011) found that key motivators included rather: opportunities to practise mastery, the practice of autonomous judgement, tying into meaningful purpose, and the development of socially significant pathways. Each of these relates

directly to the development of agency, accountability, and positive responsibility. This suggests that students will be more motivated and more aware through pedagogy which is focused in dialogue, narratives and the exercise of the imagination. It also suggests that motivation is focused in the development of identity and relationality. Identity is partly worked out through giving an account to the self and others. It is also developed through the negotiating of responsibility. Indeed, Finch and Mason (1993), from work with families, concluded that much moral identity is developed through the negotiation of responsibility, rather than reference to principles or codes. This negotiation of responsibility is central also to a wider sense of shared liability.

Responsibility in the Curriculum

All of this suggests that the most effective learning approach to the SDGs is in developing modules:

- Some of which are not focused on disciplines but rather involve ongoing reflection on learning and development. Such modules can serve *both* to develop skills *and* integrate such practice across the other disciplines.
- Are focused on deliberation, dialogue and narrative, so that responsibility is developed in and through actual learning. Here the learning is not cognitive preparation for practice, it is the actual practice of responsibility.
- Can enable students to develop their own learning frameworks, connecting to the development of personal planning.

The example we set out was developed in the International Faculty of Leeds Metropolitan University (now Leeds Beckett University), involving professional and personal development modules in undergraduate courses, delivered over three years. The programme introduces students to the concept and practice responsibility, starting in

the first year with their responsibility in higher education, progressing in the second year to professional and civil responsibility, and culminating in the third year with global responsibility. The progressive reflection on and practice of responsibility provides the spine from which all cognate areas are connected. The usefulness of this example is in its illustration of how deliberation, narrative and dialogue can be practised within the curriculum. This includes developing dialogue with stakeholders inside and outside the university, enabling mutual challenge and shared responsibility. There are clearly many different ways in which such dialogue can be developed and thus in turn can act as a reflection on research, and the ethics of how this is conducted.

Year One: Student Responsibility, my University

This module introduces the students, through a number of reflective cycles, to the role of the student, the purpose of university and what it means to be identified with a responsible community and institution. This involves dialogue and critical reflection on the nature and purpose of learning, and the nature and role of the university, and its relationship to and responsibility for the community.

Narrative of learning

Students reflect on and develop an appreciation of the nature and purpose of learning from their school experience to this point. Was it simply the acquisition of knowledge to achieve a personal end such a job acquisition? Statistically do university degrees actually lead to good jobs, or are good jobs about character and experience? Does learning develop any key skills, if so what were they? How has the practice of learning developed for them? Each of these is then examined critically in plenary, looking at what the point of formal learning is, what self-development means in the context of Higher Education, and what the identity and responsibility of the student is, as member of the university.

Is the student customer, stakeholder or something more? This involves an analysis of the student's relationships, who they owe an account to, and how that account might be given. This begins to establish the role and identity of the student as intentional. From these discussions, and subsequent plenary, emerge a description of the value and practice of learning, reinforced by Kolb's (1984) learning cycle, and a framework of the skills of learning (including reflective skills, communication and presentation skills, psychological/relational, leadership skills), with clear indication of how these skills will be practised in the context of learning. This framework acts then as a basis for reflection on all modules.

The framework is then compared with the work of Schoen (1983), Gibbs (1988) and others on reflective practice, leading to further student dialogue about the underlying values and related virtues implicit in this work. From this discussion emerges:

- Core values of learning, including personal and practical development.
- Core values of a community which enables such learning: including freedom to learn, academic freedom, safe community for the practice of conversation, freedom as agency, equality, equal respect for members of the academic community, justice (including avoiding the injustice of plagiarism, and integrity.
- The underlying virtues needed, including practical wisdom and other intellectual virtues (for judgement), courage (for presentation).

This enables further dialogue about the relation of academic learning to learning for practice, and how it can develop 'employability' as noted above in Yorke and Knights (2004) analysis. Finally, in this section students discuss the core responsibilities in the practice of learning, including: responsibility for developing critical agency; the mutual accountability of students to teachers/organisation; the shared

responsibility for learning and the community of learning. Critical dialogue is then developed with a number of academics and administrators, aiming to arrive at a shared understanding of plural and mutual accountability, and shared responsibility.

Narrative of the University

A second overlapping but distinct critical reflective cycle in groups is around the theme of the purpose of higher education. Responses have included occupational utility, personal development, learning for its own sake, economic utility for society and contribution towards "inclusive and civilised" society (cf. Dearing 1997). Each of these is critically analysed by the groups in conversation, leading to a plenary analysis of higher education as a community of practice, an institution, and a network of stakeholders (cf. CIHE 2005).

The dialogue in the section is widened to include different members of the university. First, the Vice-Chancellor is invited to begin a reflection on the history and identity of the university including the key purpose, relationships to the region and country, criteria for success, and plans for the future. The ensuing dialogue with the students focuses on critical reflection, the nature of the learning community, the identity of the university in region and nationally (including the relationship with other universities). What makes your university special, how do you represent it with people from other universities? What is the core purpose of Higher Education? The nature and purpose is critically discussed with external stakeholders, focusing on how others perceive the purpose and practice of the university in their area and globally, from contributions of research, how it links to different elements of the SDGs, to the relationships of students with the local area.

From these dialogues a class framework is developed, informed by the report *Ethics Matters in Higher* (CIHE 2005) which examines the purpose and ethical principles of Higher Education, and of the students' own university in relation to learning, research, community and business

relations, and wider environment. This framework is then tested through dialogue with members of the board of the university, lay and academic, heads of CSR and sustainability, and the head of the Students Union, about the SDGs and how the university responds to these, including reporting mechanisms and partnership with the local and global community.

The students then develop an analyse of the university's value statements, codes, policies, marketing, ongoing monitoring and reflection, and responsibilities, based on the dialogues and a critical reflection on the university's web information, involving:

- exploring for value statements, and assessing the nature of these- are they principles, codes, visions etc.? How is purpose handled?
- Critically evaluating the values and how they are set out.
- Exploring how values are embodied in policy and practice, noting the plural nature of the university.
- Exploring how the practice is monitored and reported on.
- Exploring key tensions and how they are handled, not least between the continued development of a learning and research community and the financial sustainability of the organisation.

All this fed back to the board members and staff who have been in dialogue, through a presentation (the first of two assessed pieces of work) before an audience which includes members of different faculties in the university and different organisations from the community, including the HE SDG network (https://www.acu.ac.uk/get-involved/higher-education-and-the-sdgs-network). Part of this involves a stakeholder analysis of the university and the complex and different value narratives of professional bodies who use the university for training, the management of the university, relations to community, and the social, environmental, and global responsibility of the university.

The final written assessed work is an analysis of the case study of Nottingham University's acceptance of sponsorship from British American Tobacco (Smith and Campbell 2001, Robinson 2011), noting the views of the different stakeholders about the key purpose, ethical principles and responsibilities of the university. This invites students to reflect on the nature and importance of leadership in sustainable development at all levels of the university, and to explore ways of balancing financial sustainability and shared responsibility for a community of learning.

Metacognitive reflection

The final reflection of this module involves the students reflecting on their learning journey through the year and their developing skills and virtues.

This includes reflection on the development of their leadership, the leadership in the university and the leadership of the university in the community. In particular the identification of leadership and taking responsibility is explored. In effect the dynamics of leadership at whatever level involve taking responsibility for one's own thinking and actions.

Year Two: Community Engagement. Civil and Professional Responsibility

From the identity of the student and university in the first module the second-year module focuses on civic and professional identity, and the practice of leadership, building on the relationship of the university to the community examined in the first year.

Integrating SDGs

This dialogue begins with a case study of the Amsterdam Child Diabetes Project (AAGG, Hawkes et al 2017), introduced online by the

coordinators. The project, focused on the high level of diabetes in children, especially in the poor areas of Amsterdam. From the dialogue about the project a class framework is developed, detailing:

- The SDGs involved locally in the case, including health, poverty, education, nutrition, justice and equality, innovative industry. This forms the basis for exploring the interconnection of the SDGs.
- The shared responsibility for these areas, across business, education, local authority, health care, and family; noting how responsibility was developed in each of these sectors, leading to a 13% decrease in childhood obesity (Robinson and Doody 2021), and became the basis for ongoing dialogue, learning and innovation.
- The dynamics of leadership, focused in the three modes of responsibility, and developing narrative, dialogue and shared decision- making. Dialogue and a clear learning platform enabled the sense of shared responsibility across the different groups and also the negotiation of particular responsibilities. A key example of this was the health authorities identifying core elements of fitness included exercise and sleep. Schools focused on integrating exercise into daily school life, and the family began to develop responsibility for adequate sleep. Up to that point many parents were unable to exercise this responsibility because they had not developed the skills to ensure that their children got a good night's sleep. Hence, health experts worked with the parents to develop bedtime strategies, based in enabling children to make the choice to go to bed.

Reflection

The class discussed the dynamics of the case, noting how the different modes of responsibility were developed across the different

stakeholders. This also provided the basis for motivating SDGs response. As noted above (Pink (2011) motivation is focused less in financial rewards and more in appreciation of purpose, agency, and the development of creative pathways. The experience of AAGG suggests an additional motivator was the support of the different stakeholders, a sense of mutual value, a sense of common purpose, and a sense that their practice made a significant difference.

Civic identity and sustainable development

A second dialogue, led by a leader from the local authority reflects on the local community and the different stakeholders, in terms of SDGs, including:

- the role of citizen and what responsibilities this sets up.
- the nature of civil society, the role of intermediate organisations in relation to community, and the nature of civil and cross-cultural dialogue.
- underlying worldviews and how they affect perceptions of society.
- Conflict and tensions within community.
- Example of how groups in the local region work together, connecting the different elements of the SDGs.

This dialogue then extends to cross cultural groups, volunteer organisations and businesses and professions, focused in Covid 19 and how the local region responded.

Professions

The students are then invited to reflect on the companies, firms or professions that they aim to target for jobs and analyse them in terms of responsibility, and work through what would be needed to develop global awareness and responsibility in firms. Each profession/firm is analysed in terms of the framework developed in the first year, including

purpose, values, professional and corporate responsibility. Hearing the different purpose and values from different groups provides the basis for developing creative imagination in terms of how different groups can work together around developing the SDGs.

The focus for this is then related to any professional experience in the second year, from voluntary work-placements to internships or more sustained professional development in one of the professions.

Leadership

In the light of the dialogue on community and the professions, the class then is given space to reflect where leadership has emerged and what this tells us about on the nature of leadership, and what the core skills and virtues of leadership might be. Three major local leaders of business and professions begin the dialogue to develop and analysis of leadership which is focused in individual, organisational and regional leadership. This includes each leader's perception of how they lead and how their profession or organisation leads sustainable development in the region. The reflection on the nature of leadership then briefly includes major theories of leadership such as transactional, transformative, servant and eco- leadership (Western 2008).

The class then have a presentation from Mervyn King (King III) about leadership and governance in South Africa. King's report notes three core values in governance: sustainability, citizenship, and leadership. The second and third stress that these core practices are values in themselves, not simply means to an end.

Employability

As in the first year, the students are invited to reflect on their reflecting, this time beginning to assess how well they had done it as a class. The students are then invited to develop reflections on their view of employability, how they develop enterprise and professional skills, and how they will communicate their employability through CVs,

interview and so on, seeing these as means of giving an account of themselves in different contexts and to different parties. These form the basis of the final written assignment.

This is then compared to a full list of employability skills. The students are then invited to reflect on their own practice and how far it reflects these skills, and to note how their practice in the first year has developed them, and what needs development. They then make a plan for how they will be developed, and how this will relate to other modules in the degree.

Pedagogical note

The reflective process increasingly involves attention to plurality and the 'other', and with that the possibility of strong dissonance emerging that will test key elements of group dialogue. The role of teachers then extends to enabling dialogue which can help participants reflect on the differences and dissonance, and to experience the difficulty of mutual challenge and mutual affirmation. In turn this involved closer attention to listening and the capacity to challenge ideas and not the person.

Year Three: Global Responsibility.

The global engagement module changes the focus to the realities of the global context and seeks to help students gain an understanding of what is going on in the global arena that will have a bearing on their futures, as individuals, in their future employing organisations and as citizens of changing nation states, with and identity as global citizens. This takes further the themes of difference and common humanity that were developed in the second year and focuses on how in professional life one deals with a plurality of demands and meaning.

Integrity of the university

The first dialogue returns to HE with students questioning leadership of their university about its global identity. Where does it operate and what effect does it have on the local environment and society? Does the university have an identity a global citizen, and if so does it enable dialogue in the university between the different stakeholders, from students to members of professions about their role in this? How does the university respond to the complexity of global culture on campus? How does the university give an account of its global footprint, including use of air travel for conferences? Does the university contribute to issues such as justice, peace and health in the countries in which it operates, and if not how might it? Does the university see the global context as important to learning, or does it see it as an opportunity to recruit foreign students? Has the university critically examined the possible risks of operating globally?

This dialogue critically tests the global integrity of the university and of the HE sector as a whole, leading to a presentation from a member of Transparency International on global Higher Education and corruption, focusing on the massive increase in students globally, and in money targeted for HE (https://www.transparency.org/ en/publications/global-corruption-report-education), and how this has led to increases in corrupt behaviour.

Regional organisations

The global identity of the region and its business is then examined. Student teams identify regional businesses and organisations which have an established global SDG profile each choosing one (e.g. Marks and Spencer, Yorkshire Tea). The teams develop a case study of how the SDGs are integrated into practice, from dialogue with the business corporate responsibility directors, showing how responsibility is

developed within the organisation and through relations with global stakeholders.

Core findings are shared in a plenary, focusing on how different approaches might involve learning points for all organisations involved (and shared with the organisations). This acts as the main assessment for the module.

Reflection and transition

Students in plenary then get the chance to discuss the three modules and what they have learned in terms of developing the modes of responsibility and the integration of the SDGs. They then focus on the connections to other modules and how they are affected by the perspectives of responsibility.

In the light of the imminent transition to the workforce, the students review their employability work of the first modules and the second modules work on businesses and professions, and revise their CV material in the light of the third module learning.

Final presentations and dialogue

Members of the UN Global Compact https://www.unglobal compact.org/, the Globally Responsible Leadership Initiative (https://grli.org/) and different professions (e.g. the Royal Society of Medicine, https://www.rsm.ac.uk/environmental-sustainability/) are invited by the students to a public meeting to develop a dialogue around global and professional responsibility and the SDGs, with students acting as interlocutors, and enabling a dialogue with the wider public, with the aim of developing shared responsibility across the region- a tangible example of students taking responsibility for leadership in this area.

Conclusions

The view of responsibility and its teaching outlined above does not involve trying to "make people more responsible". Nor does it involve an attempt to assert a particular ideology or altruistic perspective, or the argument for a particular "paradigm". Paradigmatic thinking tends to encourage polarised perspectives, with the underlying attempt to persuade others to buy into the "new paradigm". We would argue that responsibility as outlined above focuses on a plurality of "paradigms", with a primary responsibility for continually testing these in relation to shared practice. The strongest approaches to the teaching of responsibility have always been focused on the identity and practice of the group. Hence, professional ethics and responsibility emerge from reflection on practice and purpose. These do not have to import an ideology or make a discrete justification for including responsibility. It is part of who the professional is. As we have noted, none of this is value free and thus rational agency and critical challenge are directly connected to wider more proactive and moral views of responsibility. Hence, we have attempted to make responsibility mainstream, indeed the starting point, of what it means to be student, an organisation, a professional, a citizen (locally and globally), and, in of these things, a leader. From the practice of that responsibility, the person in each of these roles and beyond is then invited to see what the implications are for wider practice. This enables a stress on individual, collective, shared and multiple responsibility, for data gathering, for mutual articulation, reflection, and critique of values, for negotiating and effecting response (through individual and group presentations). Hence, responsibility as such cannot be predetermined or ring fenced, but demands continual practice in critical reflection on ideas, feelings and values, in giving an account to many different groups, and in sharing a wider responsibility. It is that conscious practice that enables the student to integrate the

wider professional and business practice, the different disciplines and cognate areas, the very different world views and perspectives on purpose and value, and thus the meaning and practice of the SDGs.

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6

DEIGNAN AWARD OF RESPONSIBLE ENTREPRENEURSHIP

EXPLORING THE ETHICAL UNDERPINNINGS OF A PROPOSED AWARD IN THE CONTEXT OF THE UNITED NATIONS SUSTAINABILITY GOALS

Stephan Rothlin

Keywords

Incentives; Ethical underpinning of Economics; Deignan Award; Responsible Entrepreneurship; Confucian Ethics.

Abstract

The article discusses a proposed "Deignan Award for Responsible Entrepreneurship", "DARE," by examining the economic theory and empirical methods, with a special attention to the ethical presuppositions, underpinning DARE. Given the overall focus on the achievement of the UN Sustainability Goals, the article argues that Compliance based administrative approaches need to be supplemented

with intrinsic motivation through awards like DARE. These offer incentives for businesspeople and key stakeholders to freely embrace and compete for the achievement of the UN Sustainability goals as well as to maintain a focus on the genuine meaning of core issues of Responsible Entrepreneurship. This approach maintains the importance of compliance but argues that it needs to be supplemented by intrinsic motivation which may be especially relevant in an Asian Confucian context where "walking the talk" and setting the tone from the top play a decisive role within strictly hierarchical settings, prone to widespread corruption. Awards like DARE may in fact play a modest but significant role in shaping a new economic paradigm oriented towards the common good, contrasted with a reductive model of economics and finance focused exclusively on profit maximization, economic growth, monetary rewards, and cost cutting, coupled with a questionable rhetoric about Corporate Social Responsibility which may easily be abused as a tool for PR unfettered by either proper oversight or mechanisms supporting transparency.*

Introduction

The article limits itself to discuss a few key elements of a proposed sustainability award to highlight the intrinsic link between economics and its ethical underpinnings. The research was partly provoked by some

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previous findings on the implementation of the Global Compact in China,[189] which clearly pointed out widespread ignorance of the concrete content of the ten principles of the Global Compact among the companies that had made a commitment to stick to its principles. Therefore, the DARE project is focused on several points:

1) The incentive structure is designed to significantly raise awareness, motivation and performance of awards in order to make progress on the UN sustainability goals.
2) The proposed award highlights the ethical relevance of economic performance which in the conventional models is largely ignored.
3) DARE is meant to showcase "intrinsic motivation"[190] as a crucial driving force in a modern economy, above and beyond extrinsic, material motivations. However, the article argues that DARE not only goes beyond considerations as developed in the realm of social psychology, business economics, management but also hints at the relevance of ethics. Frey and Gallus also underscore various social values linked with awards: Awards can contribute to happiness; awards raise productivity and contributions to public goods, (*op.cit*., p. 2). Awards seem to be particularly well suited to honour comprehensive achievements.
4) The article will attempt to compare DARE with a multiplicity of similar sustainability awards and will highlight the distinctive feature of its unique selling points.
5) It will argue that DARE's role is to raise awareness of the mostly neglected moral dimension of economics, thus exhibiting a

[189] Rothlin, Stephan: Towards a Socially Responsible China: A Preliminary Investigation of the Implementation of the Global Compact, in: *Journal of International Business Ethics*, vol.3, no.1, 2010, 3-13

[190] Frey, Bruno S. & Gallus, Jan. 2017: *Honours Versus Money. The Economics of Awards*, Oxford: Oxford University Press, p.vi

potential for shaping a new paradigm of economics oriented to the common good and networks of solidarity and subsidiarity.

6) The article will also analyze possible pitfalls of a distorted and misleading approach to sustainability awards.

The Vision of DARE

As awards often recognize performances that are difficult or impossible to exactly define and measure, it is important to develop and communicate a vision which conveys the key values of an Award which usually go beyond monetary awards. Awards are a low-cost investment in honouring individuals as well as organizations and causes.

1. While compliance serves to make sure that individuals and institutions do observe the law, it is obvious that there are myriads of ways to bypass the law especially through corruption. Therefore, awards may serve as an additional channel to encourage ethical business practices in competitive business environments and challenge entrepreneurs to respond creatively to the principles of justice, solidarity, and subsidiarity. We have however to presume that understanding and embracing these key principles involves a risk and remains quite fragile until regular training courses involving discussion and reference to new case studies and personal experiences refresh the memory and renew personal commitments to these values. Research on the implementation of the ten Corporate Social Responsibility principles of the Global Compact in China documents that fast turnover in staffing makes it very difficult to communicate these principles and foster a commitment to implement them in a systematic way.

2. The “Deignan Award of Responsible Entrepreneurship” refers to the name and the life achievements of the Jesuit educator, Fr. Alfred Deignan S.J. (1927-2018), originally from Ireland, who spent over 50 years in Hong Kong and had a decisive impact in educating generations of students with a particular focus on basic human values, namely,

integrity, honesty, truthfulness, forgiveness, and human dignity. Particularly in a time when values seem to be eroding and everybody's stamina is tested with a seemingly never-ending pandemic and ongoing political upheavals, it may be particularly meaningful to re-examine basic human values as they are tested in the hurly burly of daily life not only for individuals but also for institutions.

Alfred Deignan advocated ten core values during his mission in Hong Kong and asked his fellow Irish Jesuit friend Fr Sean Coghlan to briefly provide a simple up to the point definition of the key values[191]. The point of the simple definition goes beyond the boundaries of specific religious creeds or atheistic or nihilistic ideologies. These are the key values without which any business will actually fail. The point about them is therefore not to daydream but to appeal to a certain "common sense of both heart and mind" which lies at the core of business success:

1) Love "rejoices with the truth" (New American Bible, 1 Cor 13: 6).
2) Respect: "A condition of openness, acceptance and common decency towards others, appreciating their values."
3) Responsibility: "Willingly and freely commit to a task."
4) Peace: "A state of calmness or harmony that comes from within, reaching out to others."
5) Honesty: "Congruence of what one holds in his/her mind and what he/she expresses."
6) Justice: "Conformity to the truth, fact or reason. Righteousness and justice are the best guide for one's action."

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[191] Coughlan, Sean. "The 10 Basic Human Values," in: *Hong Kong International Institute of Educational Leadership Quarterly Newsletter*, Issue No 35, January 2008, 1.

7) Self-Discipline: "A form of self-control which shows a person's awareness that his or her behaviour is acceptable to community. In addition, the person is ready to resist temptation and sacrifice personal interest for the common good."
8) Service: "Love and care in action, bringing inner happiness to both the giver and the recipient."
9) Cooperation: "Working with others in a harmonious way endeavoring to accomplish a task well."
10) Simplicity: "A state whereby the plainness or naturalness is maintained."

The challenge is to support the vision of Alfred Deignan SJ in implementing these key values which point very clearly in the direction of intrinsic values, whereas extrinsic values such as money, profit, status etc. are not mentioned. This does not imply a vision of business which is totally disconnected to the real world of cut-throat business; extrinsic factors such as profit, money, status do count; however, the basic values ultimately have an impact on the happiness of individuals as well as on the benefit of the larger society. The main target group consists of business leaders who inspire morally exemplary behavior in others by fighting against intolerable situations of injustice and by contributing to the common good. In 1997 Alfred Deignan, together with Andrew So and other friends from Hong Kong, founded the "Hong Kong International Institute for Educational Leadership" (HKIIEL), to promote value education in different educational institutions. The promotion of the core values always implied an institutional dimension and was not just confined to individual efforts. If awards are to be effective, it is crucial to provide the institutional conditions which are conducive for the further growth of values on all levels of the society but particularly among the young. While DARE could be gradually extended to Mainland China and other Asian countries it is currently

restricted to Hong Kong and Macau, given the fact that these cities often serve as laboratories and forerunners of China.

Criteria to Assess Business Performance

It is a specific feature[192] of DARE to strike a balance between the ethical level of the 10 core values and compliance with the law, namely in the following areas:

1) Legal compliance: Applicants for the award must demonstrate compliance with local laws and regulations where the company operates. They must comply with international laws and regulations as well.
2) Ethical/Clean company: There must be proven evidence that an applicant is not involved in unethical practices like accounting fraud, corruption, bribery, and conflict of interest etc.
3) Respecting the dignity of all human beings: They must show how they honor their commitment to treating each person/stakeholder as a human being.
4) Innovation: Applicants should be involved in developing and/or producing innovative products, or providing innovative services that respond to the needs of human beings and that change or contribute to the life quality of human beings constructively. The products and services should be accessible to a majority of human beings.
5) Fair prices: Applicants make reasonable profits by selling products and providing services at fair and just prices to customers; buying products, raw materials and supplies from suppliers at fair and just prices.

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[192] The criteria are based on the recent research by Carlos Noronha, Jenny Guan and their research team of the "MICSRGC", the Macau Institute of Corporate Social Responsibility in Greater China.

6) Communication: Applicants use appropriate media to communicate truthful information to the public about the company, its products, and services.
7) Fair competition: Applicants must demonstrate how they engage competitors fairly.
8) Responsible environmental practices: Applicants must strive to use resources economically that create the least damage to the environment during their operations. They must address the adverse environmental impact they may have created during previous operations or after customers use the products/services. Applicants must employ ways to influence its customers, competitors, suppliers, employees, and other stakeholders to protect the environment during their operations.
9) Human Resource Policies (Employee engagement and well-being): Applicants must develop policies providing fair job opportunities to capable people with different backgrounds; fair living wages; training and development opportunities; humane job design; interesting and meaningful job content that allow employees to enjoy job satisfaction and utilize their talents; appropriate training for employees to capture needed skills and acquire knowledge of the ethical standards of the company; appropriate tools and equipment to enhance work efficiency and prevent accidents; ways to influence and motivate employees to behave ethically; psychological and physical safety in the workplace; insurance for employees; ethical appraisal systems; implement policies demonstrating concern for work-life balance of employees; apply the principle of subsidiarity to develop a corporate culture of trust so employees would be fully engaged and committed; and make the availability of all these transparent, enabling employees who serve the company to earn a decent

return while also serving the society by producing goods to other people.

10) Socially responsible investment: Avoid investing in and doing business with unethical companies lacking a commitment to social responsibility.
11) Crisis management: Applicants should document the company's timely responsive actions to internal crises as well as social crises, to minimize their adverse impact on its stakeholders.
12) Corporate philanthropy: Applicants should document the company's policies on charity support and donations; focusing on activities encouraging harmonious relationships within family and society.

Here it needs to be noted that there is an ongoing confusion about the difference in the meaning between "Corporate Social Responsibility" and "Corporate Philanthropy". Particularly in China there is a widespread belief that "Corporate Social Responsibility" needs to be equated with "Corporate Philanthropy". This is however not correct: Corporate Social Responsibility refers to the obligations and fiduciary duties that institutions, firms and individuals need to keep in mind in key areas of the public arena, such as just labor conditions, food safety, fair competition, diminishing of corruption etc. In other words, a firm may impress with generous contributions to charities along the lines of corporate philanthropy while the same firm may massively abuse its work force. Such a firm might be practicing "Corporate Philanthropy" but still fail to meet general expectations for "Corporate Social Responsibility."

These criteria are meant to be a reality check focused on a comprehensive analysis of what the applying companies have done rather than what their mission says or what they plan to do. It is therefore necessary to develop a list of detailed expectations that can guide them regarding what DARE is looking for, and at the same time

provide them with a way to document their work/achievement. Participants must explain and show evidence how they have achieved all these criteria.

As part of their application for DARE, a company may also include what they perceive are elements missing from the criteria but which they believe are essential for understanding their claim to responsible entrepreneurship. What has the company achieved? How has the company achieved them? Phone interviews and site visits may need to be conducted to verify what is stated in the application form or what might be difficult to describe in a short document. It is also necessary to determine the time frame that can best show their achievement including improvements as well as accounting for setbacks. Two years may be a minimum.

Balance between Small and Medium Sized and Multinational Companies

Another key element regarding the intrinsic link to a new economic paradigm which is more oriented towards the Common Good lies in the mix of po tential candidates for DARE, which include both Small and Medium Enterprises (SME) and Multinational Corporations (MNC)[193].

[193] Definition of SME in HK: Manufacturing enterprises which employ fewer than 100 persons and non-manufacturing enterprises which employ fewer than 50 persons are regarded as SMEs in Hong Kong. As of September 2020, there were over 340 000 SMEs in HK.
Definition of SME in Macau: Small and micro enterprises are defined as any business which has over 50 per cent of its share capital held by Macao residents, and employs no more than 15 people who are working in the Macao Special Administrative Region. Here is a rough and ready definition of MNCs: A firm that has facilities and other assets in at least one country other than its home country. A multinational company generally has offices and/or factories in different countries and a centralized head office where they coordinate global management. In 2018, Hong Kong was home to 1,530 regional headquarters for

Given the preponderant influence of the MNCs, and their PR capabilities, a common misperception about awards is that MNCs would be most likely to receive such awards, given their perceived broader impact on society in contrast with the SMEs. However, given the fact that SMEs are a more decisive factor in the global economy for creating new jobs compared with MNCs, it seems most appropriate to identify and award both Small Medium Enterprises (SME) and Multinational (MNC) entrepreneurs who show a track record of achievements in Ethical and Sustainable Business practices.

The criteria listed here for the DARE awards have been designed to reflect the concerns expressed in various documents on Corporate Social Responsibility and Business Ethics, including the document "Vocation of a Business Leader" (2021, Mingpao Press, Hong Kong) and the volumes of the series on Business Ethics and Applied Ethics (Peking University Press & University of International Business & Economics Press, Beijing 2000- 2021)

Balance between Business and Academia

A key element of the credibility of any award related to sustainability seems to be achieving a balance between concrete business experiences and the appearance of academic substance. In the case of DARE the contribution and guidance from the Macau Ricci Institute seems to be critical as the core mission of this research institution, which was founded in December 1999, aims at the critical dialogue between Christianity and the wisdom traditions of China especially Buddhism and Daoism. Alfred Deignan was one of the founding fathers of the Macau Ricci Institute, which seeks to balance historic research on the cultural exchange between China and Europe as

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MNCs. Some of these regional headquarters are the hub for the Asia-Pacific Region, while others serve as the hub for the Greater China region.

initiated by Matteo Ricci (1552-1610) and generations of missionaries, and the analysis of contemporary topics related to the recent history of China in its interaction with other cultures.

There may be another significant benefit emerging from a close interaction between business and academia, which must make sure that the branding of the award is clearly defined and based, on the one hand, on sound research and references to comprehensive publications on the topic of Responsible Entrepreneurship, while on the other hand, with a variety of business practitioners who will ensure that the specific situation, needs, restrictions and recent trends are sufficiently taken into account. This balance must be reflected in the various institutional bodies supporting DARE, namely:

1) The function of a Steering Committee is crucial to provide advice, monitoring and ensure the achievement of project outcomes.
2) The Steering Committee will be composed of delegates from the concerned organizations plus other stakeholders as appropriate.
3) The Steering Committee prepares and approves the terms of reference for DARE including vision, objectives, scope and deliverables, roles and responsibilities and determine the success factors, assessment of risks and constraints. The Steering Committee will have regular meetings on DARE progress and have the approval authority over all major decisions.
4) Important procedures such as sourcing and selecting a PR firm, a panel of award judges, the determination of award criteria and the finalists' list will be closely monitored by the Steering Committee.
5) Factory or Site Visits, or a Company Health Check for the shortlisted participants shall be arranged as far as practical and possible, otherwise a reference check plus Zoom meetings

conducted by the Executive Working Team will be necessary to substantiate the qualifications of the participants.

Unique Selling Points of the Deignan Award

1) The focus of DARE is on SMEs and MNCs operating within the cross-cultural centers of Hong Kong and Macau. In the wake of social unrest in Hong Kong and other profound social changes happening in both Hong Kong and Macau it may easily be forgotten that generations of missionaries have left a distinctive mark in these cities which serve as a special door to China, especially in the area of education.
2) The objective is to carefully select successful and qualified SMEs and MNCs from Hong Kong and Macau which show a credible track record of specific achievements in the field of sustainability and the implementation of ethical practices based on the most updated research on Corporate Social Responsibility, ESG criteria and Business Ethics.
3) DARE will shortlist 3 Finalists in both categories of SMEs and MNCs and pick the Winner out of the 3 Finalists during its first award ceremony on 25th March 2023.
4) DARE distinguishes itself from similar awards in its reference to the need within the competitive business world for genuine solidarity, subsidiarity, respect for the dignity of each person, and orientation toward the common good. Inspired by the leadership of Alfred Deignan (1927-2018) as an outstanding educator and advocate of business ethics DARE focuses on both the personal and the institutional relevance of the key 10 core basic values Alfred Deignan advocated during his mission in Hong Kong

One of the favorite sayings Alfred Deignan SJ liked to quote is the following from Theodore Roosevelt: "To educate a person in mind and not in morals is to educate a menace to society." Alfred Deignan was deeply disappointed by the mere lip service that businesspeople usually paid to his teachings on Business Ethics. DARE therefore strives to demonstrate with compelling examples that law and ethics can be taken seriously, even in adverse circumstances.

Reputational Risk: The Shaming potential of DARE

Awards have often been abused as pure PR tools, and understandably dismissed as lacking much substance. The terms "Corporate Social Responsibility" and "Business Ethics," in both academia and business, have been abused to hide highly unethical practices such as rampant plagiarism and copyright theft, money-laundering and a whole register of business crimes. Whilst the focus of an award like DARE is meant to strike a positive note in reference to 10 core values embedded in business culture it is also important to hint at the other side of the coin: it is mandatory that DARE keep a faithful account of all applicants especially those who have been shortlisted and won the award. A particular shame would naturally fall on any participant in the DARE who would act against the principles of DARE. These acts cannot be narrowly defined along the lines of business crimes. As the recent reports of the "Panama-Papers" (2016) and the "Pandora-Papers" (2021) demonstrated in shocking detail and with devastating evidence, the world has become acutely aware of how massively individuals, government officials, and private institutions are still deeply engrained in widespread corruption, abuse of power and disregard of the most basic human rights. Sometimes tax avoidance of rich individuals and organization is legal; however, in the context of an ever-growing gap between the rich and the poor, it is particularly shocking and disturbing in countries on the brink of economic collapse

like Lebanon, or Nigeria, where ruthless cliques still shamelessly use every trick to shift their ill-gotten gains through shell companies into their own dirty pockets. The prestige of DARE with its value system would greatly be at risk if no major attention were paid to these forms of massive abuse as well as to the common cynical prejudice that underpins the behaviour of many businesspeople and scholars, namely, to dismiss any efforts to promote sound business practices as daydreaming.

Conclusion

This article has argued that for the achievement of the UN's Sustainability goals it seems crucial to target the intrinsic motivation of key market players to act as responsible entrepreneurs. An exclusive focus on compliance may not be enough to bring about a lasting change. DARE's main goal is described as a social experiment and very much "a work in progress" in order to help unleash an ethical drive and genuine determination to act in a responsible manner in the interest of the Common Good, while doing its best to diminish corruption and respect the dignity of every player involved in the market especially the most vulnerable ones. However, those sponsoring DARE also make the case for decisive shaming of any participant and recipient of the award who would engage at some point in criminal or unethical acts.

7

DECENT WORK AND ECONOMIC GROWTH: IMPERATIVES AND RESPONSIBILITIES FOR HIGHER EDUCATION TO DRIVE POSITIVE AND PRACTICAL CHANGE

Hellicy C Ngambi, Meiya G Nthoesane

Keywords

Decent Work; Economic Growth; Imperatives for Higher Education; Positive and Practical Change; SDGs, Proactive Response to Covid-19.

Abstract

Institutions of higher learning are revered as a force to drive change in society. Arguably, by both their ability and capacity to question the status quo through intense research and knowledge production and by transforming societies through empowering students. Noble as it sounds, the question that the institutions of higher learning of the 21st century should ponder lies in their ability and willingness to drive economic growth and advance the attainment of Goal 8 of the SDGs. This is more so critical on the backdrop of COVID-19 ravaged economies. The calamities resulting in the current spate of the pandemic further threatens the attainments and prioritisation of Sustainable Development Goals (SDGs). This is more so pronounced in the Sub Saharan Africa

and in countries like Zambia in particular. This reality demands for pragmatic solutions driven by focused leadership. Based on this realisation Mulungushi University positioned itself, both philosophically and practically as an institution of higher learning that develop targeted future looking scenarios for driving sustainable creation of livelihoods, through a myriad of work creation and entrepreneurship initiatives. This chapter, therefore outlines a near decade long period of how the University, transformed its systems and put in motioned a strategy that positively enhanced decent work and participated in economic growth, at the least of the Central Province of Zambia situated in Kabwe, thus actively ensuring the attaining of the SDGs.*

Introduction

Whose problem is Sustainable Development Goals anyway? The Millennium Development Goals (MDGs) were never reached for several reasons, including excuses. New goals were set, Sustainable Development Goals (SDGs as they are known), the question is whose problem it is for these goals to be reached. "Once upon a time, there was a family that kept a cow, a dog, a chicken and a cat. A rat was seen in the house and the owner of the house set a trap to kill it. The rat then called a meeting with other animals in the house and asked for their help

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in removing the trap. All the other animals, especially the chicken and the cow told the rat off, saying that the trap did not concern them since it could not trap them. The trap eventually caught a venomous snake, but not before the snake fatally bit the owner of the house while he was trying to stop a fight between the cat and the dog. The cat and the dog, each blaming each other for the owner's demise fought one another to death. For the owner's funeral, the cow was slaughtered, and for the last funeral rites, so was the chicken" (Ngambi, 1999:31). The question that is even more appealing is whether nations, organisation and individuals see the need to galvanise support and effort to ensure the attainment of SDGs. The parable above clearly indicates that it is always our collective problem. To this this end the chapter aims to share milestones achieved by Mulungushi University, a future looking institute of higher learning, in advancing the course for achieving Goal eight of the SDGs.

Theory and Concepts of Decent Work

International Labour Organisation (n/d) positions decent work as a critical part that amplify and sums up the dreams and aspirations of people during their productive working years. Among many elements that make up this summation of the aspirations is the provision of opportunities for work that is productive and can deliver a fair income commensurate to the effort put. Anker, Chernyshev, Egger, Mehran and Ritter (2003) provides six conceptual dimensions of decent work agenda as envisaged to achieve Goal eight of the SDGs, and they are:

1. The need to create work opportunities for work to all persons (men and women) who want to work, are willing to work to be able to find work. This dimension implicitly put in the centre the need for the availability of work and/or work opportunities in all its forms, ranging from formal to informal.

2. Work in conditions of freedom, that there should not be forced labour in all its forms and those who chose to work, are able to work and are in the legal age of work, should have the freedom to choose their work. This freedom is further extended to the ability to join workers labour organisations freely.

3. Those who can and are able to find work need to have "acceptable livelihoods for themselves and their families". This dimension suggests that at the bare minimum there must be fair, just and sustainable monetary compensation commensurate to the skills brought by the employee.

4. Fourthly is of equity in work. This equity serves as insurance for fairness and equitable, moreover, there are equal opportunities void of discrimination at work.

5. Security at work is presented as the fifth dimension. Elements of this dimension include safeguarding health, pensions, livelihoods of the workers, provision of adequate financial health, and other contingencies. It also recognises worker's need to limit insecurity associated with the possible loss of work and livelihood.

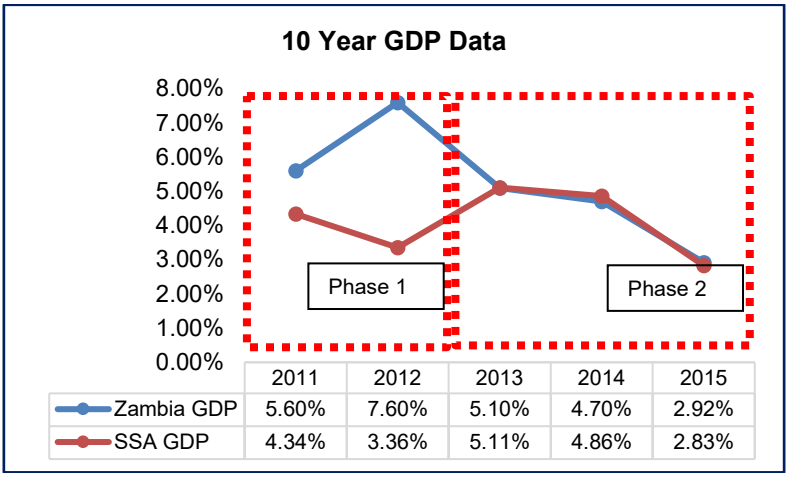
6. The sixth and final dimension of decent work is dignity at work. This dictates that workers must be treated with respect at work and be able to voice concerns freely and participate in decision-making about working conditions.

Malan (2019) urges organisations to provide employees with decent work, as this is arguably a proxy for decent life since decent work will potentially lead to increase employees' work fulfilment and general wellbeing. Decent work does not happen in isolation, and therefore it

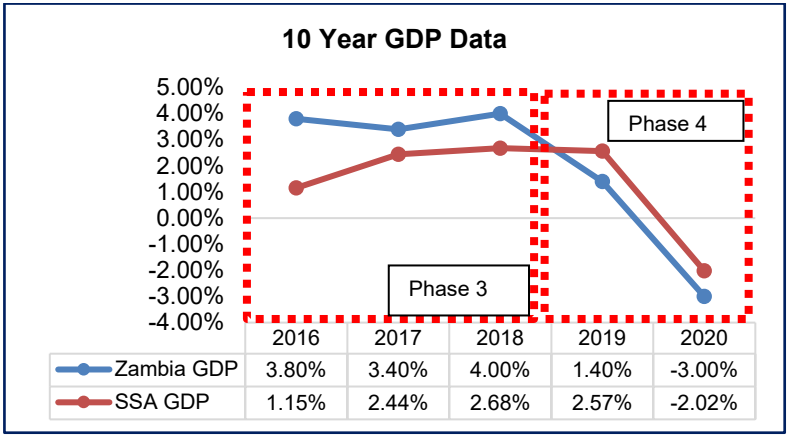
might be necessary to look at some of Zambia's indicators that has a potentially direct relationship with decent work.

Zambian Economic Indicators

In order for us to look at the matter of decent work and economic growth as they intercept with higher education institutions, it is necessary to pay attention to some of the economic data from Zambia over the years. The first data to observe is that of Gross Domestic Product (GDP) over the past decade. The Zambia data is compared with that of Sub-Saharan Africa (SSA), on the premise that the region in some ways share similar or related economic, social and developmental challenges (and opportunities).



	2011	2012	2013	2014	2015
Zambia GDP	5.60%	7.60%	5.10%	4.70%	2.92%
SSA GDP	4.34%	3.36%	5.11%	4.86%	2.83%

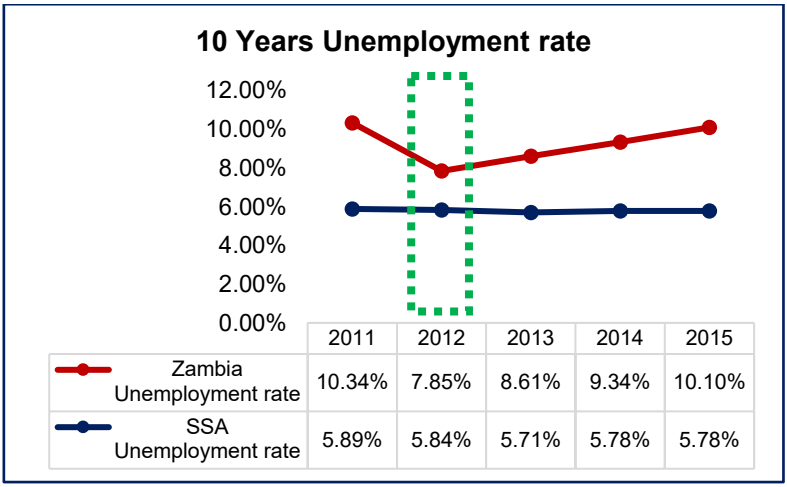


	2016	2017	2018	2019	2020
Zambia GDP	3.80%	3.40%	4.00%	1.40%	-3.00%
SSA GDP	1.15%	2.44%	2.68%	2.57%	-2.02%

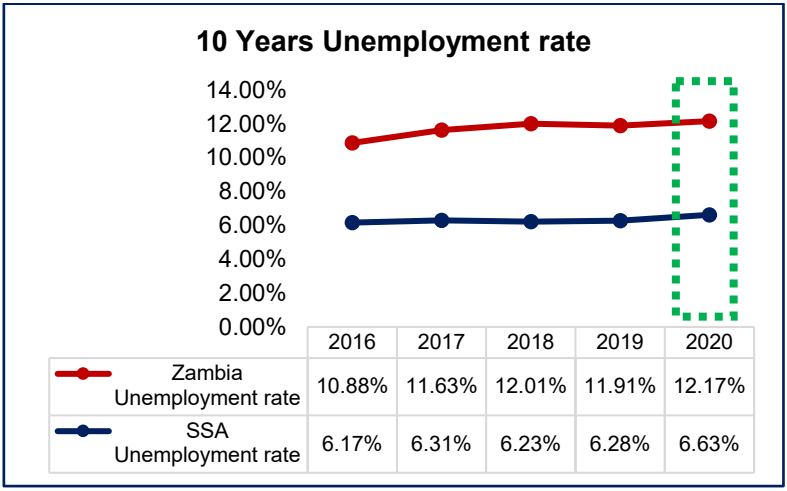
Figures 1: Ten years Gross Domestic Product (GDP) in Zambia. Data Source: Zambia (Bank of Zambia) and SSA (Macrotrends.com)

Figure 1 shows generally four phases of GDP performance between SSA and Zambia. The first phase, between 2011 and 2012, depicts GDP growth of Zambia being greater than that of the region. Peak performance shown in 2012, with the all time high of 7,60% in the period under investigation. Phase 2, as shown by period 2013, 2014 and 2015, here Zambia and the region have correlation in GDP performance, declining gradually. Phase 3, between 2015 and mid-2018; in this period Zambia experience a better growth than the region. The last phase that commences mid 2018 till 2020, the region performs slightly better than Zambia, however, both starts declining sharply from mid-2019. Like other economies and regions in the world, the 2020 GDP performance is negative (indicative of adverse impact of COVID-19 pandemic). During the decade under investigation, the Zambian economy performs the worst at -3.00%. This analysis is necessary because it is assumed that institutions of higher learning will have taken interest in this performance and develop curricula that will develop graduates who will be better positioned to improve the economic standing. Secondly, institutions could also seize the opportunity to partake in activities that

improve economic performance of the country. The next key economic datum observed is the unemployment rate, as shown in figure 2.



	2011	2012	2013	2014	2015
Zambia Unemployment rate	10.34%	7.85%	8.61%	9.34%	10.10%
SSA Unemployment rate	5.89%	5.84%	5.71%	5.78%	5.78%



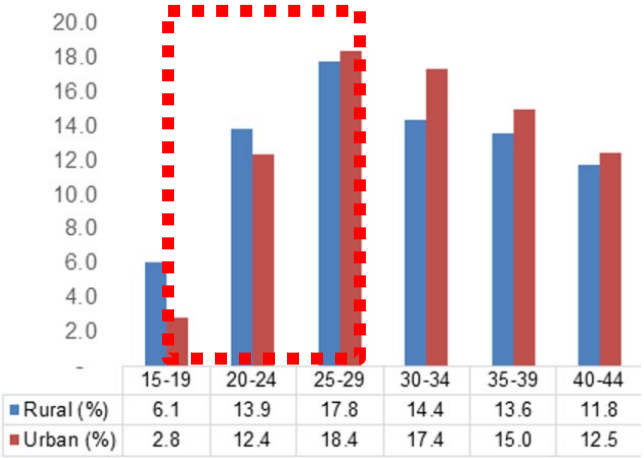
	2016	2017	2018	2019	2020
Zambia Unemployment rate	10.88%	11.63%	12.01%	11.91%	12.17%
SSA Unemployment rate	6.17%	6.31%	6.23%	6.28%	6.63%

Figures 2: Ten years unemployment rate in Zambia. Data Source: Zambia (Bank of Zambia) and SSA (Statistica.com)

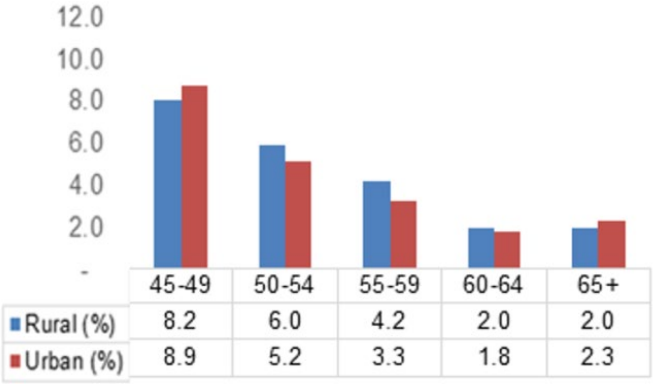
Zambia has had an unemployment rate above the region's rate for the entire decade under observation. As from 2016 the country has experienced the rate in double digits with the worst recorded in 2020,

understandably due to the negative economic impact brought by the pandemic worldwide. In analysing the unemployment data, an inverse relationship between GDP and unemployment rate can be seen, especially in the years 2012 and 2020. In 2012 GDP was at its highest in Zambia and unemployment was at its lowest. Conversely, in 2020 GDP was at its lowest and unemployment at its highest. This observation suggests that if the country can find ways and put in measures of improving GDP (and other related variables and indicators) there is a likelihood to minimise unemployment. This observation lies at the core of SDG 8, or creating decent jobs, growing the economy and ensuring sustainable livelihoods.

Placing institutions of higher learning at the centre of economic developments necessitates that a special attention be given to the age group that dominates these institutions. While it is factual to argue that student population cut across all age groups, it is equally factual to argue that majority of student population in higher education institutions, is between the years of nineteen (19) and twenty-nine (29). This positioning is premised on the observation that in this period an undergraduate and a postgraduate qualification can be attained.



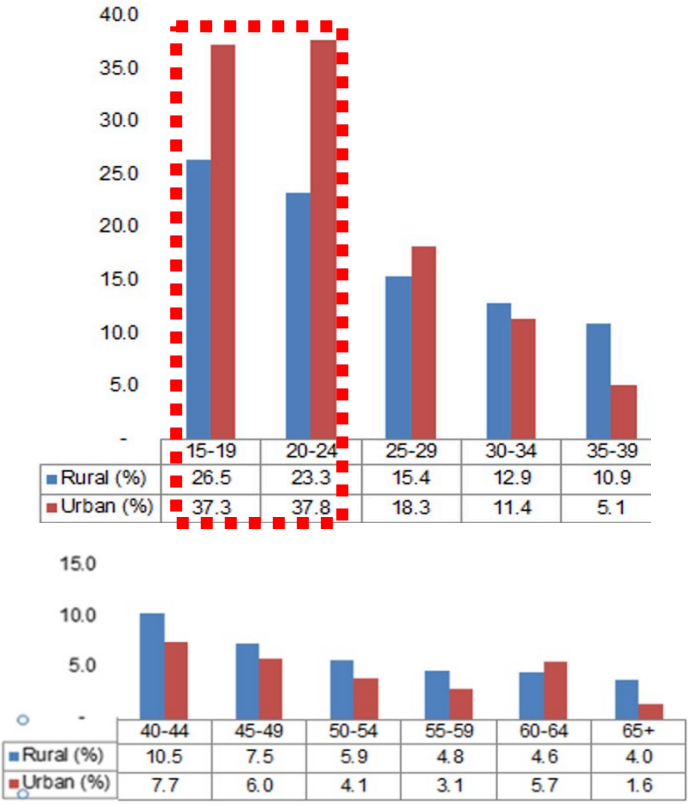
	15-19	20-24	25-29	30-34	35-39	40-44
Rural (%)	6.1	13.9	17.8	14.4	13.6	11.8
Urban (%)	2.8	12.4	18.4	17.4	15.0	12.5



	45-49	50-54	55-59	60-64	65+
Rural (%)	8.2	6.0	4.2	2.0	2.0
Urban (%)	8.9	5.2	3.3	1.8	2.3

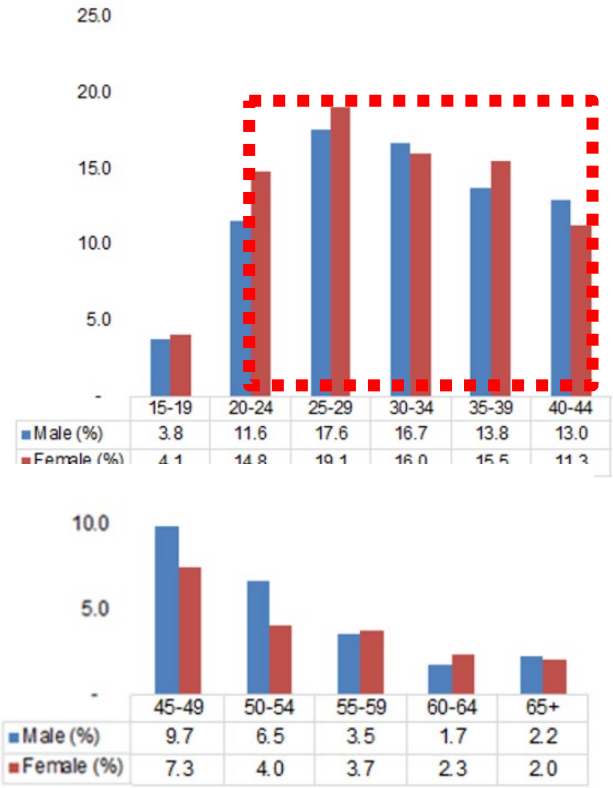
Figures 3: Percentage distribution of the Labour Force (15 years to 65+) by Rural/Urban and Age group, Zambia 2020. Source: Zambia Statistical Agency

Figure 3 shows that about a third of potential students are found in both rural and urban areas, (31.7% rural and 30.8% urban). This labour force that is needed for driving economic activity, and in return should have decent jobs is also a potential pool for institutions of higher learning to ensure that they are attracted to these instructions. Further, they need to be provided with education that is relevant to ensure that they thrive in their respective labour activities.



Figures 4: Age-specific unemployment rate by Rural/Urban, Zambia 2020. Source: Zambia Statistical Agency

Figure 4 shows that the same age category by rural and urban also presents the highest unemployment rate (combined) in 2020. There could be a number of reasons why this age group has the highest unemployment rate, whatever the reasons, institutions of higher learning at the least need to ensure that this cohort has requisite skills and education to equip them for prospects of employability and/or entrepreneurship.



Figures 5: Percentage distribution of the Labour Force (15 years or older) by age group and gender, Zambia 2020. Source: Zambia Statistical Agency

Figure 5 indicates that in this potential group of students, females dominate males, by 33.9% and 29.2%, respectively. This suggests to institutions of higher learning to be prepared to a changed student population, whereby there is a likelihood to have more female population than male population. Furthermore, in countries like Zambia where historically economic activities were seen to be that of males, it means a potential shift and change. Thus, universities must be prepared for this shift as they advance their pedagogic inclinations.

Philosophical and practical questions can be asked. Firstly, does education matter in promoting decent work and economic growth? Secondly, the twin question can and must be asked, do institutions of higher education matter in promoting decent work and economic growth? A part answer is found in figure 6, data showing that most of the unemployed population has grade 1 to grade 12 education, this is true for both males and females. There is about 10% of unemployed males and females who have post grade 12 qualification, a diploma or certificate. Likewise, only 0.7% for females and 2% for males with bachelor's degree. This observation suggest that educational attainment is related to lesser prospects of being unemployed.

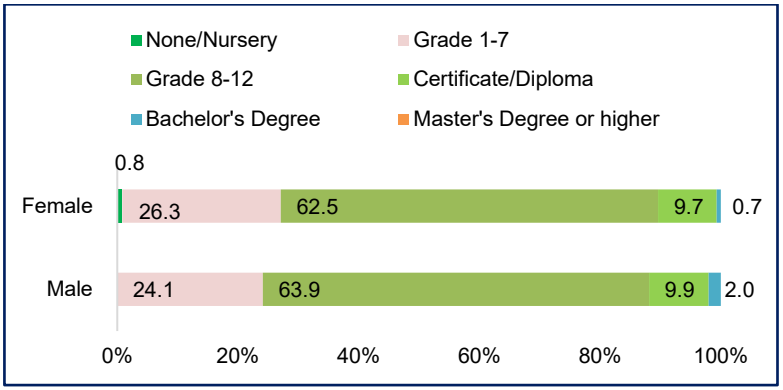


Figure 6: Percentage share of unemployed population by highest educational attainment, Zambia 2020. Source: Zambia Statistical Agency

These data further suggest that people with master's degree and above are never unemployed. It is rather safe to posture that the chances of being unemployed with master's degree or higher are negligible.

HEI Architecture as Change Agent

Nyerere (2018) explores the role of Higher Education Institutions as key drivers for addressing social and economic development, this work concludes that universities are pivotal as agents and instruments of social change and social development. Further, urges that this role should be harnessed to create the linkages between rural and urban segments. This finding suggest that higher education institutions must contribute to social development and change by shifting their focus in training to influence social change through, among other things, incorporating social enterprises training and practices in their curricula.

Syed (2018) postures that universities in the 21st century in general and those on the African continent, need to adopt an 'entrepreneurial university' approach mainly dominated by the Western Universities. Author presents several indicators for an entrepreneurial university, including:

- *Organisational capacity* – where there are clear incentives and rewards for staff who actively support and advance the university's entrepreneurial mandate.
- *Entrepreneurship development in teaching and learning* – the systems, structures and curriculum need to be intentionally entrepreneurial in nature. For instance, promotion of collaboration with industry players and research finding that inform industry.
- *Pathways for entrepreneurs* – the university need to provide support to both staff and students, from idea to market and be a conduit for business incubation facilities.
- *Internationalised institution* – internationalisation is key and pivotal to entrepreneurial strategy and success; hence the university need to support and facilitate international networks and mobility.
- *Develop impact metrics* – to be a successful entrepreneurial university, there needs to be metrics to measure at its bare minimum,

start-up support, impact of entrepreneurial teaching and economic impact on society.

In addition, Kourilsky and Walstad (1998) support the notion and approach of entrepreneurial university through curriculum development, in that such curriculum prepare the students towards the "make-a-job" as opposed to "take-a-job" options.

HEI as a Driver of Practical Change: Case of Mulungushi University

Mulungushi University (MU) was established in 2008 under public sector with the core principles of a private sector. The university generates 85 percent of its revenue through entrepreneurial activities, like attracting students with demand-driven programmes, running a business center, poultry farming, bee keeping and selling honey in commercial outlets like Shoprite, and many more. The vision statement of Mulungushi University is linked to the vision 2030, MDGs/SDGs and national mandate as MU '*pursues the frontiers of knowledge*'. The universities vision captures its innate role of fostering economic growth, namely: 'The leading innovative, relevant and reputable university of excellence in Africa and globally'. Additionally, the Mission of MU is to provide high quality academic programs, research and consultancy services through stake-holder engagement. In order to drive its mission in pursuit of the vision, MU has seven strategic goals, namely:

- Produce high quality graduates that are relevant to the local and international market;
- Carry out innovative research for development;
- Promote community engagement and partnership;
- Enhance capacities and competences for running the university effectively and efficiently in line with the principles of corporate governance;

- Develop appropriate infrastructure to support institutional activities;
- Enhance viability of business and commercial ventures to contribute to the university's revenue
- Expand and promote the use of ICTs.

The University adopted the RARE (Responsible, Accountable, Relevant, Ethical) values in their strategic plan as their modus operandi based on Ngambi's (2011) research. These values have also shaped the way MU responds to challenges such as COVID-19. It is critically important to understand that COVID-19 directly had negative impact to the Goal 8 of SDGs, by way of people's work being under threat and nations' economies experiencing potential recessions. MU response was to ensure that the university agenda and goals are not entirely obliterated. For instance, during the break of the pandemic, MU Senate resolved to implement the Government directive for all students to leave the University campus to minimize the spread of the virus. MU Senate further resolved that students will continue to learn during the time the University is closed using ICT Technology (Learning Management System, Collaboration software and Virtual classrooms). Prior to physical closure, University Management met all the students to brief them and outline how online learning will be implemented. The University students were appreciative of this gesture and initiative from Management not to allow the pandemic to derail their future prospects.

Mulungushi University had proactively been using the learning management system and a lot of materials as well as assignment were already available on the platform. The learning management system was fully integrated with different systems in the university (Finance/SIS/library etc) and students were very familiar with the system. MU was the only Public University in Zambia that did not stop the teaching and learning when the institutions of higher learning were directed by the government's indefinite's closure of universities that

commenced 20th March, 2020. The following actions were taken by MU to ensure that the promotion of sustained, inclusive, and sustainable economic growth, full and productive employment and decent work for all (SDG8) is neither delayed not derailed[194].

To ensure that the existing e-Learning platform was fully usable:

1. ICT department created a video manual for Moodle for both students and staff to supplement the existing user manuals.
2. Procurement acquired and the resident engineer installed a generator dedicated to the server room that can run for at least 8 hours daily and is automated. This is to mitigate the ZESCO Nationwide load shedding schedule the University was experiencing.
3. Lecturers compiled all their course lecture materials in PDF/PowerPoint and submitted to Moodle.
4. A dedicated e-Learning support officer was assigned to coordinate the online learning and act as a focal point for students and lecturers.
5. Created and enhanced an integrated approach in teaching using techniques such as Zoom, WhatsApp, recorded PowerPoint, Moodle, Google classrooms delivered through the virtual classrooms.
6. Marketed tablets to students encouraged students to install the MU Android APP/Astria Digital Library and Moodle App.
7. Signed MoU with internet providers like MTN and ZAMTEL to zero rate access to learning management portal to address poor internet service in various locations and address huge cost of internet Data Bundles.

[194] Sourced from Quarterly Dean reports to the Vice Chancellor, Mulungushi University 2020

8. Enhanced Moodle platform and additional training to Lecturers to address the inadequacy and inaccessibility of the online learning management system.
9. Integrated BigbluebuttonsBN to allow lecturers to interact with students so that they reduce on sending a lot of reading materials and assignments at once.
10. Decided that the examination would be open book and students would be given 24hours because of Internet challenges and ZESCO power load shedding in their areas of residence.
11. Lecturers were (re)trained on how to conduct open book examinations. Moodle system was re-tested and was successful. Student participation in the mock examination was 95% and in final exam was 98%.

Students watched the livestream of the lectures or downloaded the recording of the lecture to (re)view it later. Students collaborated and responded to their lecturers through chats. Five rooms (virtual classrooms) were dedicated for recording of lectures and interacting with students. To implement these measures the MU immediately invested about K500,000 to enhance the existing IT infrastructure equipment.

Based on theory, MU can propose a four-pronged framed framework for universities to actively participate in ensuring the attainment of Goal 8 of the SDGs, and the framework includes:

- *Curriculum development*: this is how universities plan their curricula development to be future looking and responding to the national needs and attainment of SDGs;
- *Practice*: ability to put in place practical examples and close the gap between theory and practice. This behaviour makes is easier for graduates to enter the place of work;

- *Job creation*: either as students or staff members, efforts are made to implement initiatives that create jobs, either formal or informal; and
- *Entrepreneurship*: university's role in providing an enabling environment for entrepreneurship to flourish, for staff, alumni and current students.

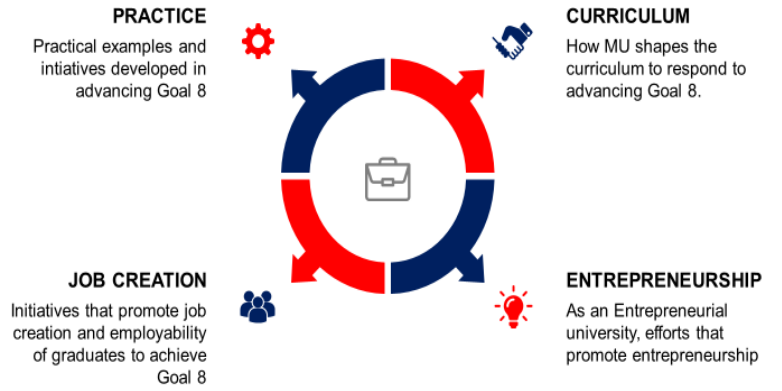


Figure 7: Four step approach to achieving Goal 8 of SDGs at MU

Curriculum Development and Employability

Multidisciplinary approach in curriculum development necessitated the establishment of three additional schools. These are the School of Science Engineering and Technology, School of Medicine and Health Sciences and Schools of Education[195]. The context and reality of the STEM (Science, Technology, Engineering, Mathematics) Programmes in general and engineering, technology and health sciences have the ability to produce graduates that usually become self-employed, thus a possibility for expanding on decent work argumentation. The Mulungushi University Medical School is based in Livingstone, within

[195] Sourced from Quarterly Dean reports to the Vice Chancellor, Mulungushi University 2020

Livingstone Central Hospital premises. It was opened in September, 2017. The current curriculum offering of the school at its Livingstone campus includes Bachelor of Medicine and Bachelor of Surgery (MBChB; Bachelor of Sciences in Biomedical Sciences; Master of Science in Human Anatomy; Master of Science in Biochemistry; Master of Science in Chemical Pathology; Master of Science in Immunopathology. The other three following programmes are offered at its MU's town campus in Kabwe: Bachelor of Sciences in Nursing (BSc Nursing) (offered on full time and open distance learning mode); Bachelor of Pharmacy (BPharm); Abridged Nursing Programme (ANP).

The programmes that will be rolled in in subsequent years, include, Bachelor of Dental Surgery, Master of Medicine Degree in Paediatrics and Child Health, Master of Medicine Degree in General Surgery, Master of Medicine Degree in Obstetrics and Gynaecology, Master of Medicine Degree in Internal Medicine.

Through the School of Agriculture[196], Mulungushi University is implementing a project called "Problem-based-learning bioeconomy entrepreneurship and capacity building programme" (PBL-BioAfrica project). The project is funded by the Finnish Ministry for Foreign Affairs and it contributes to the University's programme's long-term impact by Strengthening the capacity of bioeconomy higher education institutions to provide pedagogically innovative, work-life relevant and accessible higher education for large student numbers in Sub-Saharan Africa. This impact is enabled by PBL-BioAfrica's specific outcome, which is improved climate-smart bio-entrepreneurship curricula, teaching, and management capacity.

PBL-BioAfrica's activities are focusing on four key outputs:

[196] Sourced from Quarterly Dean reports to the Vice Chancellor, Mulungushi University 2020

- Improved institutional capacity to provide climate-smart bio-entrepreneurship education with problem-based learning (PBL) methodologies through open distance learning (ODL) formats and open education resources (OER);

- Enhanced quality of climate-smart bio-entrepreneurship education through student-centred teaching that leverages PBL-methodologies;

- Strengthened institutional network-based learning ecosystem with academia, societal/industry partners and educational governance;

- Strengthened institutional capacity to further contextualize and develop curricula, pedagogical methodology, and learning ecosystems through national and international partnerships.

By making students research projects and internship compulsory before graduation. The student projects are assessed to check how they address the 17 SDGs, for example MU, through its School of Science Engineering and Technology (SSET), have had the projects on how ICTs facilitate smart water and sanitation management, an Internet of Things (IoT) Smart Broiler Farming Model for Low Income Farmers and software application of health delivery service

By offering courses to our students such as Engineering, Artificial Intelligence, Internet of Things and mobile technology that specifically targets SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation. Further the University has produced Engineering and Information Communication Technology qualified personnel in order to address Government vision for SMART Zambia as articulated in vision 2030 and 7th National Development Plan.

By undertaking research that address the SDGs, for example COVID-19 pandemic had its impacts on productive employment SDG8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all. The University in partnership with other institutions undertook development of a Mobile Application for COVID-19 Contact Tracing with Data Mining Techniques and Application of Predictive Analytics for Possible COVID-19 Pandemic Epicenters. The goal of the project was to exploit the potential of ubiquitous mobile technologies and application predictive analysis to predict the impact of COVID-19 and related diseases in Zambia. This will assist the efficiency of rapid response to curb the spread of the pandemic in the nation.

By partnering with other institutions to achieve the SDGs, for example MU signed an MoU with Huawei to offer practicum courses to students and to allow students participate in national and international competitions. Below are some of the further activities from SSET's Department of Computer Science in contributing to meeting the SDGs/ vision 2030;

- Encouraging students to undertake final year research projects that seek to address some of the challenges posed by the current era of COVID19. For example, the department currently has a students' project on *Smart Digital Flushable Toilet for Efficient Water Mgt and Enhanced Hygiene in Zambia*. While this speaks to SDG 6 (ensure availability and sustainable management of water and sanitation for all), it interlinks with the possibility for job creation a target for Goal 8 and SDG3 (ensure healthy lives and promote well-being for all at all ages); it is equally relevant for Goal 8, in the sense that countries need healthy work force for sustainable economic growth.

- By undertaking interdisciplinary research that addresses the challenges of financial insecurities and literacy. The COVID19 era

has seen a heavy shift towards increased online presence and activities. Novice online users have potentially been victims of bogus online investment opportunities (Ponzi and Pyramid Schemes) which has resulted in financial insecurities as the Internet is increasingly becoming unsafe. The department commissioned a cyber security research on financial cybercrime, this is necessary because online businesses are in the all-time high, further, the costs of establishing an online business are much lesser compared to the traditional brick and mortar. This work will prove critical in supporting entities, and indirectly, ensure sustained existence, which should feed in sustained economic growth.

Practice

Beekeeping Project

The beekeeping project at Mulungushi University under the School of Agricultural and Natural Resources, arises from the milestone which aimed at establishing a fully functional self-sustaining Beekeeping Center under the "Capacity Building in Beekeeping and Honey Production Value Chain Task." The Task was supported by the Southern African Science Service Centre on Climate Change and Adaptive Land Management (SASSCAL) programme. This SASSCAL project was implemented in late 2013 and wound up in 2018. Since the winding up of the project under SASSCAL, the project has run entirely as Mulungushi University project through the School of Agriculture and Natural Resources.

The rationale of the project is to provide an alternative livelihood to forest-dependent communities as a way of reducing forest degradation caused by charcoal production, firewood collection, settlements and agricultural activities. This project therefore directly addresses climate change mitigation (SDG# 13) while providing opportunities for improved livelihoods among the communities (SDGs #1 and 2). While

Mulungushi University has its own apiaries, the institution has entered into partnership with local forest-dependent communities in North-western Province. Rather than degrading forests through charcoal burning and other undesirable activities, these communities keep bees which produce honey. Then twice in a year (July and December), Mulungushi buys honeycomb from these beekeepers and processes it into liquid honey. This honey is then sold to the public through retail channels such as Shoprite Chain of Stores. The Mulungushi University honey is 100% organic and thus contributes to the health of all those who consume it.

Job creation

Job creation is done by producing graduates with practical experience in Engineering and Information Technology and other science related subjects as well as through the entrepreneurship degree programme offered in the School of Business, so that they are self-employed. For example, a student produced an Internet of Things (IoT) Smart Broiler Farming Model for Low Income Farmers and IoT based Warehouse Intrusion Detection (E-Perimeter), Grain Tracking Model for Food Reserve Agency. These projects are aimed at empowering small-scale farmers with the technology to improve their agricultural production to alleviate poverty.

Also, jobs are created through business activities at the business centre and farm related activities. Beyond Mulungushi University, a study conducted by Shameenda and Imasiku (2018) across Zambian Universities for distance students, found that industrial internship is one of the effective modalities and approaches to equip university students with preliminary job knowledge and experience, thus enhancing their employability in the competitive labour market. This suggests an active involvement by Zambia universities to explore a plethora of

opportunities and initiatives in advancing better prospects for job creation to their respective students.

Entrepreneurship

Increase Project

INCREASE stands for *Increasing Climate Resilience in Energy & Agriculture Systems and Entrepreneurship*. The project is funded by Swedish International Development Agency (SIDA) and the Lead Partner is SNV (Netherlands Development Organization). Mulungushi University through the School of Agriculture and Natural Resources is the Implementing Partner. The project aims to strengthen the adaptive capacity of agricultural and energy systems as well as the promotion of climate smart (CS) diversification practices and productive use of renewable energy (RE). The project envisions to make agricultural and energy systems more resilient to a changing climate (IMPACT). Horticulture, Cotton and Dairy are the economic sectors the intervention targets. These sectors are in turn defined by an inter-play of 1) farmers, 2) small and medium sized enterprises (SMEs), and 3) larger companies and agents. For farmers, this means improving income, food and energy security, largely through adoption of CS practices and increasing access to CS products, services and finance. For SMEs and the larger companies, they work with, this means facilitating better linkages between SMEs and companies, improving the CS services they offer and improving CS extension capacities of companies.

The main purpose of the project is therefore to set the stage for wider adoption by other stakeholders and businesses within the respective three economic sectors. A key instrument to facilitate the coordination are multi stakeholder platforms. These platforms are multi-functional – covering the promotion of the CS practices developed under the project, lobbying, networking and knowledge sharing. Institutionalisation is achieved in part by advocating sector specific policy briefs and engaging

with governmental partners and institutions to implement the project. Lasting behavioural change leading to widespread adoption of CS practices by smallholder farmers is ensured through the economic benefit of every actor along the supply chain.

Within the INCREASE project are two other important components addressing climate change. These are 1) Agroforestry project and 2) Biogas project. A demonstration plot measuring about 1 hectare within the University Farm is housing these two components. With regard to agroforestry, citrus trees and Leucaena trees have been planted. These trees will take approximately five years to grow and mature. During this period, other crops such as vegetables will be grown for sale and consumption. The purpose of this demonstration plot on agroforestry is to show that integrating trees within agricultural systems has many benefits. These include increased agricultural productivity, reduced hunger and poverty, women's empowerment, biodiversity support, regenerated soils, enhanced farm resilience, improved and diversified diets, as well as climate change mitigation.

Regarding Biogas, this is a renewable energy generated from the decomposition of organic matter. In this case, livestock manure is deposited into a bio-digester without air, generating biogas and bio fertilizer. Biogas, in addition to household uses such as cooking and lighting, it can also be used to fuel engines for milking systems, farm machinery and water pumps, among other uses. This project has been placed near livestock houses at the University Farm. The proximity to the livestock accommodation is to ensure that manure can easily be obtained. Biogas provides a means of mitigation to reduce the sources or enhance the sinks of greenhouse gases. It captures organic wastes (in this case manure), producing renewable energy, and returning nutrients and organic content to the soil.

Examples[197] of two successful MU Alumni entrepreneurs: Tabonga Musukwa Kalabi and Arnold Nyendwa

Tabonga Musukwa Kalabi

She graduated at MU in 2019 as best graduating student MBA specialization in entrepreneurship prize by professional insurance. She was awarded by the district commissioners office a certificate of recognition for entrepreneurship and motivational speaking March 2019. She graduated from the Academy for women entrepreneurs' program under the US embassy top of her cohort and won the pitch challenge 2020. She was awarded a $25,000 grant under USADF agroprocessing which has allowed her to set up a production plant. She is currently serving as the Vice President Kabwe Chamber of Commerce and Trade having served as the Vice Treasurer. She continues to host various masterclasses aimed at propelling business growth as well as financial literacy across the country. This is in addition to being the founder and owner of Kwitu Cafe.

Arnold Nyendwa

He is currently a student at MU, a one of a kind inventor with multiple accolades attached to his his name. He is a TEDx Speaker and Global Winning Inventor and Entrpreneur. He is the winner of the Global Youth Awards 2021 Environmental Innovation at Round Table; Innovator of the Year Award 2021 UK at Black Impact; Listed on the Top 30 under 30 Future of Zambia by the Dream Factory; Africa Focus Awards Nigeria 2021 at Focus on Africa; Top 20 Finalist Destination Zero Competition 20221 at British Council; Finalist Winner 2021 South Africa at Africa Genius Awards; 2020 Most Outstanding Entrepreneur Winner USA at Mwape Peer Awards; Global Student Entrepreneurship Awards Winner at Global Students Entrepreneurship; Winner SAAADA Awards South Africa 2018 at Columbus Stainless Steel and Village

[197] Mulungushi University records and personal interviews, 2021.

Development Best Practice in Zambia 2015 at Junior Engineering Technology. He is an inentor and innovator of First dry cleanable pillows in Zambia[198] and the inentor of first stainless steel stove in Afica.

These two examples are an epitome of how institutions of higher learning can change the landscape of students in ensuring that they are pioneers in achieving the goal on decent work and economic growth.

Conclusion

SDGs are a call to humanity to come together in its diverse existence, from rich to poor nations; from the developed to developing nations, from public institutions to private corporates and respond to these goals in however, small way they can. Work, particularly decent work will not present itself if people of the globe do not put concerted and active effort in creating these jobs. In the absence of work, economic activity and growth are but a pipe dream. The dichotomy of opulence in the sea poverty observed between the rich nations and poor nations, the latter predominantly presented by the global south must be obliterated with speed. Testament to this need, had been made real by the emergence of COVID-19 pandemic that continues to create havoc globally. The pandemic is a real danger to the attainment of decent work and sustainable growth worldwide. It is in this reality and context that Mulungushi University is positioning itself proactively in its national mandate to proactively advance the attainment of SDGs. The university has presented its strategic and practical approach in achieving the goals

[198] A 24-year-old Zambian Inventor and Innovator Has Made The First Dry Cleanable Pillows In Africa - The African Dream (theafricandreamsl.com): https://theafricandreamsl.com/a-24-year-old-zambian-inventor-and-innovator-has-made-the-first-dry-cleanable-pillows-in-africa/?utm_source=rss&utm_medium=rss&utm_campaign=a-24-year-old-zambian-inventor-and-innovator-has-made-the-first-dry-cleanable-pillows-in-africa

(other goals where not presented in this chapter, as they are not part of the chapter) in this chapter. The world cannot afford to postpone the attainment of these goals, so in our collective effort we must all realise that the SDGs problem is all ours, individually and collectively, personally and organisationally. As the world, we shall not falter, as the pandemic has shown us.

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8

DRIVING ECONOMIC GROWTH WITH THE POWER OF SMALL BUSINESSES

THE UNIVERSITY OF STELLENBOSCH BUSINESS SCHOOL'S SMALL BUSINESS ACADEMY

Arnold Smit, Julie Choe, Marietjie Theron-Wepener, Esther Franzsen and Salome van Coller-Peter

Keywords

Economic growth; Small Business Academy; SDG 8; South Africa.

Abstract

The University of Stellenbosch Business School, known as SBS, forms a part of the University of Stellenbosch, a leading global research university. Located in the suburbs of Cape Town, South Africa, SBS offers postgraduate-level academic and executive programmes in Business Management and Administration, Development Finance, and Futures Studies to students from all over the globe.

The Small Business Academy, a project of the University of Stellenbosch Business School (SBS), is a multi-stakeholder educational

initiative that upskills and uplifts South African small-business owners in low-income communities to capacitate them for long-term business success. The chapter highlights the Small Business Academy (SBA) and how it serves as a development vehicle for economic growth and decent work as set forth in Sustainable Development Goal 8, within a country where the informal sector and small businesses are in desperate need of capacity building interventions. Key stages of the SBA's development will be conveyed: how the project began, how its target population was determined, and ways in which its development programme was adapted to better serve its participants and stakeholders, including the addition of coaching and mentoring as a key enabler for participant progress. Relevant lessons learned and success factors for implementing learning interventions in complex environments are shared, particularly the importance of programmatic agility and the holistic benefits of directly engaging stakeholders in the program. The chapter concludes with a reflection on the project's impacts and contributions toward SDG8*.

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Introduction

SDG 8: What it Means and Why It Matters

Sustainable Development Goal 8 (SDG8)[199] is about decent work and economic growth: promoting sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all. SDG8's eight targets demonstrate that—notwithstanding its global relevance—it is formulated to address several sustainable development concerns in the world's least developed countries. For the purposes of this chapter, special mention should be made of entrepreneurship and the growth of micro-, small-, and medium-sized enterprises (Target 8.3); full and productive employment and decent work for women and men (Target 8.5); and the reduction of the proportion of youth not in employment, education or training (Target 8.6). Altogether the intention of the SDG8 aims to raise the bar for national development policies, capacity development interventions and financial and investment support in support of people and groups suffering the consequences of poverty, unemployment, and economic exclusion.

Since the acceptance of the SDGs in 2015, much has changed. The bold outlook of SDG8 and its intention to create a more just and fair work and labour environment was brutally interrupted by the Covid-19 pandemic. According to the United Nations Department of Economic and Social Affairs,[200] the world is now facing its worst economic recession since the great depression, and global GDP per capita is expected to decline by 4.2% as a result. Consequently, the pandemic's impact for 2020 was expected to cost 400 million job losses as well as the loss of livelihoods in the informal economy of 1.6 billion people around the globe.

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[199] United Nations, Department of Economic and Social Affairs, "Sustainable Development Goal 8," https://sdgs.un.org/goals/goal8.

[200] United Nations, "Sustainable Development Goal 8."

SDG 8 in South Africa: Poverty, Inequality and Unemployment

With such a daunting global picture, the question may well be asked about the state of progress with SDG8 in South Africa as the context of this chapter. According to the South African Government Communications Newsletter "Insight,"[201] South Africa has a historical and intensifying downward trajectory of unemployment. Using the standard definition—someone between the age of 15 and 64 who is unemployed and looking for work—the country went from an unemployment rate of 20.5% in 1994 to 25.2% in 2014, then 32.5% in 2020.[202] The root causes, as reported in "Insight", include factors such as the impact of apartheid on the education and skills development of Black people, the labour market's inability to absorb the country's growing number of young people (53.2% of youth between 15-24 years are unemployed), and a general lack of interest for entrepreneurship among the country's population. These realities are juxtaposed against South Africa's National Development Plan (NDP)[203] which ambitiously aims to shrink unemployment to 14% by 2020 and 6% by 2030. The newsletter concludes by stating that "there will never be enough jobs created in the formal economy to absorb the unemployed" and that it is clear that "more people should be encouraged to start their own businesses to be entrepreneurs and ultimately be self-employed."[204]

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[201] South Africa, Government Communication and Information System, *Insight Newsletter,* Volume 1 Issue 13, https://www.gcis.gov.za/content/resourcecentre/newsletters/insight/issue13.

[202] South Africa, Statistics South Africa, *Quarterly Labour Force Survey*, 4th Quarter 2020, http://www.statssa.gov.za/?page_id=1856&PPN=P0211&SCH=72942.

[203] South Africa, National Planning Commission, *National Development Plan 2030: Our future - make it work,* 2012, https://www.gov.za/sites/default/files/gcis_document/201409/ndp-2030-our-future-make-it-workr.pdf

[204] South Africa, Government Communication and Information System, *Insight Newsletter,* Vol. 1 Iss. 13, p. 7.

In 2019, South Africa presented its Voluntary National Review[205] on the SDGs. Referring to SDG8, mention was made of a 3% decrease in GDP between 2010 and 2018 combined with a population rise of 1.6% on the one hand, and a continued decline in employment levels on the other. Among the country's barriers to growth the report noted "a poor climate for entrepreneurship and an insufficient supply of the sophisticated skills for a modern competitive economy."[206] Referring to the country's National Development Plan in relation to SDG8, the report reiterates the aim of eliminating poverty and reducing inequality by increasing economic growth. According to the National Development Plan, small businesses should play a key role in stimulating economic activity and employment and broad-based empowerment. The National Development Plan further states that the government's Small Business Incubation Programme should provide entrepreneurs with support in the form of space, infrastructure, services, knowledge, market linkages, technologies and access to finance.

The Role of Business Schools for SDG8

The question can now be asked about the role of business schools in the advancement of SDG8. Historically speaking, business schools are more naturally associated with economic growth by focusing on the role of corporations in national economies and global markets. Business school curricula, especially as manifested in the MBA, traditionally focused on business and management education suitable for the demands of modern corporations. The fruit of this education indeed becomes evident in the positive role that many big business

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[205] South Africa, National Planning Commission, *South Africa's Voluntary National Report 2019,* https://sustainabledevelopment.un.org/content/documents/23402RSA_Voluntary_National_Review_Report__9_July_2019.pdf

[206] South Africa, *National Development Plan 2030: Our future - make it work*, p.66.

organisations play in economic growth and job creation. However, the question remains whether or not business schools may develop and interest in the economic growth and job creation potential of small businesses and the education of their owner-managers.

The sustainable development agenda started to impact business school thinking around the turn of the 20th century. First there was the United Nations Global Compact which came about under the visionary leadership of Kofi Anan, the UN Secretary General at the time. At a World Economic Forum meeting at Davos in 1999, Anan invited business leaders to collaborate with the UN to improve the state of the world. Shortly thereafter, an initiative by deans and directors of leading global business schools led to the publication of the six Principles for Responsible Management Education (PRME). The PRME aimed to shift the focus and practices of business schools towards the development of an inclusive and sustainable global economy; responsible business practices; educational and curricular reforms; research and partnerships that advances the sustainable social, environmental, and economic value creation, and responsibilities of corporations; and multi-stakeholder dialogues on critical issues related to global social responsibility and sustainability. About a decade later, criteria regarding the integration of ethics, responsibility and sustainability in both the curricula and the institutional life of business schools, combined with the expectation that schools should be able to provide evidence of the social impact of their teaching, research and outreach programmes, became more prevalent in the accreditation criteria for business schools.[207] By the time the SDGs were formally adopted in 2015, leading business schools with a commitment to sustainable development and social responsibility were

[207] The three main international accreditation agencies for business schools are The Association of MBAs (AMBA), The Association to Advance Collegiate Schools of Business (AACSB), and The EFMD Quality Improvement System (EQUIS). Stellenbosch Business School is accredited by all three.

well prepared to make the connection between the PRME and the SDGs on the one hand, and the demand for management education reform on the other.

Business schools came to realise that they would have to reconsider the social impact of their teaching and research. This inaugurated a shift from a shareholder-based theory of business towards a stakeholder inclusive approach which is better aligned with the underlying assumptions of the UN Global Compact, the PRME, the SDGs and the requirements of the leading accreditation bodies. This shift also challenged business schools to reconsider their student market, realising the pricing barriers to educational access for aspiring managers and business owners from financially impaired backgrounds. Lastly, it also forced business schools to focus on organisational forms and managerial roles other than just corporations and opened the door for an interest in small businesses and even non-profit organisations.

University of Stellenbosch Business School

The new, expanded mandate for business education fits well at the University of Stellenbosch Business School (SBS). A vision of business and management education grounded in sustainable development, social impact and expanded access to business and management education inspired SBS to support the development of small-business owners with a Small Business Academy (SBA). Before this initiative will be dealt with in detail in the remainder of the chapter, a brief introduction to SBS may help to put the development of the SBA in perspective.

As a South African business school, SBS is thoroughly immersed in a world in which poverty, inequality and unemployment characterise the daily existence of the majority of citizens. While SBS, like many other business schools, attracts predominantly well-educated students from privileged families and well-established businesses, it faces the challenge of also serving the business and management education needs

of students from underprivileged backgrounds and small businesses from the informal sector.

Recognition of these local realities is embedded within SBS's vision to be globally recognised as a source of value for a better world; its mission to develop responsible leaders who positively impact society through knowledge advancement and transformative learning; and its values statements such as equity, respect, and compassion.[208] Furthermore, SBS's commitment to social impact is to create hope for people and develop social impact solutions for sustainable development challenges.[209] This orientation towards inclusive and sustainable value creation is integrated across all its academic programmes, is embedded in its institutional life, and expressed in its stakeholder relationships and social impact projects.

SBS has a firm commitment to the PRME and the SDGs. Whilst the school believes that it should develop its students to bring business and management capabilities to the whole spectrum of SDGs, it can quite naturally be expected that goals with a focus on employment and economic development, environment and sustainability and good governance will feature prominently in the areas of teaching, research, and social impact outreach. The Small Business Academy is an example of how the intentions behind SDG8 might feature as a focal point in this regard.

The remainder of this chapter will highlight the SBA and how it serves as a development vehicle for economic growth and decent work, as set forth in SDG8, in a country where the informal sector and small businesses are in desperate need of capacity building interventions. The focus will be on the SBA as a multi-stakeholder educational initiative

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[208] The University of Stellenbosch Business School, https://www.usb.ac.za/usb-about/.

[209] The University of Stellenbosch Business School, "Social Impact," https://www.usb.ac.za/social-impact-page/.

that upskills and uplifts South African business owners to capacitate them for long-term business success through three dimensions: partnering for development, training for skill, and coaching for sustainability. Key stages of the SBA's development will be conveyed: how the project began, how its target population was determined, and ways in which the development programme was adapted to better serve its participants and stakeholders, including the addition of coaching and mentoring as a key enabler for participant progress. Relevant lessons learned and success factors for implementing learning interventions in complex environments will be shared, particularly the importance of programmatic agility and holistic benefits of directly engaging stakeholders in the program.

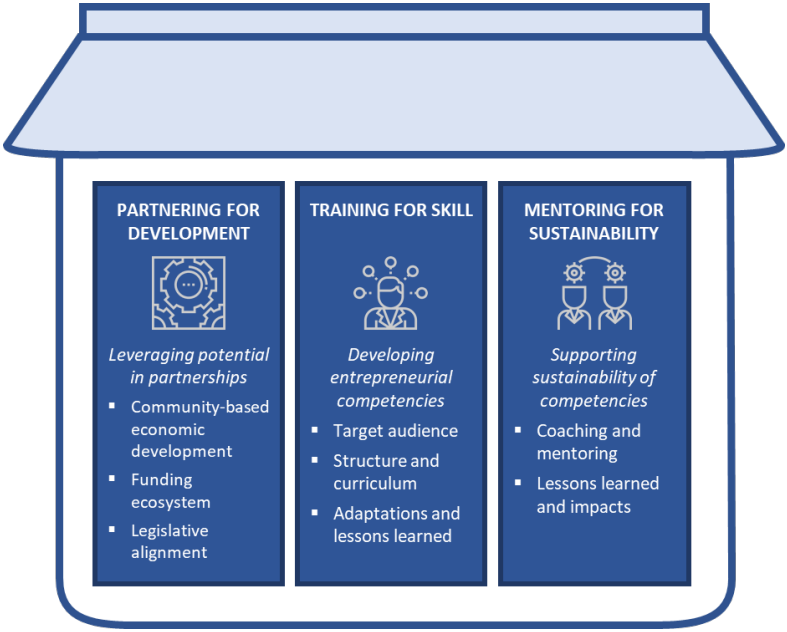


Figure: Structure of the chapter

The Small Business Academy at the University of Stellenbosch Business School

Formation of the Small Business Academy

Despite ambitious national goals to support their growth, small, medium and micro enterprises (SMMEs) in South Africa lag behind their global peers in job creation, contributions to GDP, and rates of establishment and survival. Furthermore, the International Finance Corporation found that while SMMEs contribute 34% of South Africa's GDP and employ between 50%-60% of the country's work force, only 14% of the small businesses are formalised, making their survival even more tenuous.[210] Within this context of extreme need for business education and support, SBS had a clear role to play in supporting South Africa's economic growth through supporting SMMEs.

As SBS's commitment to sustainable development grew more explicit, SBS recommitted itself to supporting especially the micro segment of SMMEs as critical to the economic growth of South Africa and the potential they provide for social engagement efforts. The Small Business Academy (SBA) was launched in May 2012 with the mission to make a difference to the lives and businesses of small-business owners in low-income communities. The SBA would focus on existing business owners, as start-ups were already well served by other training and mentoring programmes.

While SBS was experienced in executive education, the SBA Development Programme would require special consideration given its focus on SMME entrepreneurs. The multidisciplinary entrepreneurial context seldom provides a neat separation between management and

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[210] International Finance Corporation, *The Unseen Sector: A Report on the MSME Opportunity in South Africa,* Washington, D.C.: 2018, p.6, https://www.ifc.org/wps/wcm/connect/2dddbf2b-bd44-4965-a7bf-b714756026 49/2019-01-MSME-Opportunity-South-Africa.pdf?MOD=AJPERES&CVID= mxxxHod.

leadership responsibilities—it calls for different approaches than those found in larger companies.[211] SMMEs require, among others, skills in business management, marketing, financial and human resource management, as well as technical, personal, leadership, social and interpersonal skills.[212] By expanding beyond a narrow focus on skills, it was hoped the SBA would help develop competencies, the fundamental characteristics of an individual, including the motives, traits, skills, abilities, and knowledge essential to run a business venture.[213]

The SBA's Development Programme was therefore crafted to develop entrepreneurial competencies needed by individuals running already established businesses. Elements of the programme include the course work, coaching by trained management coaches, mentoring by SBS and SBA alumni, and practical workshops. Today, participating small-business owners—referred to in this chapter as SBA entrepreneurs—study with the SBA for eight months, after which they graduate with a formal certificate from Stellenbosch University (NQF level 5 in South Africa[214]). The formal qualification had been identified as an important drawcard for SBA entrepreneurs, so care was taken to

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[211] Claire M. Leitch, Christel McMullan, and Richard T. Harrison. "Leadership Development in SMEs: An Action Learning Approach." Action Learning: Research and Practice 6, no. 3 (2009): 243-263.

[212] M. Anastacia Mamabolo, Myres Kerrin, and Tumo Kele. "Entrepreneurship Management Skills Requirements in an Emerging Economy: A South African Outlook." The Southern African Journal of Entrepreneurship and Small Business Management 9, no. 1 (2017): 1-10.

[213] Haroon Bhorat, Zaakhir Asmal, Kezia Lilenstein, and Kirsten Van der Zee. "SMMEs in South Africa: Understanding the constraints on growth and performance." (2018). Development Policy Research Unit working paper: University of Cape Town.

[214] South Africa, Higher Education and Training, National Qualifications Framework: Sub-frameworks and Qualification Types, (2015), https://www.saqa.org.za/docs/brochures/2015/updated%20nqf%20levevl%20descriptors.pdf.

design the Development Programme to align with accreditation requirements of higher education certifying agencies.[215]

The Development Programme has become the flagship project of the SBA, currently operating in the Western Cape and Eastern Cape provinces of South Africa. The first iteration of the programme was developed specifically for Khayelitsha, a low-income township close to the SBS campus where the school has had strong relationships with the business community.

Partnering for Development

The necessity of partnership in development has been emphasized throughout the progression of the SDGs, recognising that complex societal issues require multilateral solutions.[216] SDG 17 focuses on leveraging partnerships and information sharing to achieve sustainable development. [217]

SMMEs, to become strong businesses, need partnering as well. Supporting them in partnership rather than through a one-way knowledge transfer produces more productive entrepreneurs who have stronger networks and are more resiliently resourced.[218] Partnership becomes even more critical within a developing entrepreneurial environment, where significant barriers and bureaucracy often limit

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[215] The SBA Development Programme of SBS is accredited by the Higher Education Quality Council (HEQC) of the Council for Higher Education (CHE) in South Africa under the auspices of Stellenbosch University.

[216]Fiona Bailey and Anne M. Dolan. "The Meaning of Partnership in Development: Lessons for Development Education." *Policy & Practice A Development Education Review* 13 (2011). https://www.developmenteducationreview.com/issue/issue-13/meaning-partnership-development-lessons-development-education.

[217] United Nations, Department of Economic and Social Affairs, "Sustainable Development Goal 17," https://sdgs.un.org/goals/goal17.

[218] F. C. Stam, and Ben Spigel. "Entrepreneurial Ecosystems." USE Discussion paper series 16, no. 13 (2016).

access to financing, formalisation of enterprises, and confidence to take risks. In the face of these obstacles, successfully capacitating entrepreneurs from traditionally underserved communities requires partnership with industry, government, community-based organisations, and academia to support entrepreneurial activity.[219] These stakeholders, in turn, benefit when stronger businesses produce jobs, formally participate in economic activity, and populate supply chains.

The SBA is an example of how inter-organisational partnerships between industry and an academic institution can support productive entrepreneurship that contributes to strengthened economies and decent work. By engaging partners in delivery of its entrepreneurial capacitation programming, the SBA has been able to build its role as a catalyst within the local business ecosystems,[220] facilitating collaboration and mutually supportive roles that provide benefits for interdependent stakeholders. These multi-stakeholder partnerships contribute toward SDG Target 17.17, which encourages effective public, public-private, and civil society partnerships.

Through its partnerships, the SBA seeks to leverage the potential available in community based economic development, the funding ecosystem, and the legislative framework in which its stakeholders operate. Through a holistic partnership approach, each party can enjoy greater benefits and increase entrepreneurial success.

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[219] Maria Isabel Carvalho and Mário Franco. "The Importance of Partnerships in Promoting Entrepreneurship Education: Case study of a group of schools." Entrepreneurship Education and Training 29, no. 4 (2015): 65.

[220] James F. Moore, "Predators and Prey: A new ecology of competition." *Harvard Business Review* 71, no. 3, (1993): 75-86.

Community-based Economic Development

The UN has acknowledged the critical role that local communities and civil society play in achieving the SDGs.[221] A core mandate of community-based economic development is contributing to economic growth within the communities they serve, in ways that acknowledge local contexts, needs, and resources. These organisations recognise the importance of fostering an entrepreneurial community in which businesses can succeed and contribute to local economic growth but providing appropriate assistance to entrepreneurs can be challenging for a host of reasons, including lack of expertise and shortcomings in the type of support offered.[222]

The SBA's partnership with a community-based economic development organisation came about serendipitously, after a leader of an economic development agency in the Eastern Cape saw an advertisement for the SBA in the South African Airways in-flight magazine and reached out to the SBA.

The Joe Gqabi Economic Development Agency (JoGEDA) works to stimulate economic growth in the Eastern Cape province of South Africa through promoting investments, stimulating trade and industry, and supporting opportunities for job creation. Its leadership had identified the need for practical business training for entrepreneurs and, rather than trying to create its own programming, they partnered with the SBA to run a Development Programme, with JoGEDA providing logistical, financial, and programmatic support. Through partnering with the SBA,

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[221] United Nations, Department of Economic and Social Affairs, "Increased Community-based Engagement Seen as Critical to Build Climate Action and Achieve the Sustainable Development Goals," https://www.un.org/sustainabledevelopment/blog/2019/07/increased-community-based-engagement-seen-as-critical-to-build-climate-action-and-achieve-the-sustainable-development-goals/.

[222] Gregg A. Lichtenstein, Thomas S. Lyons, and Nailya Kutzhanova. "Building Entrepreneurial Communities: The appropriate role of enterprise development activities." Community Development 35, no. 1 (2004): 5-24.

JoGEDA has helped to increase the number of capacitated entrepreneurs who in turn contribute to economic growth in their region of service.

Another benefit in the Eastern Cape has been the creation of leadership opportunities for local businesspeople and programme alumni to lead within their own communities. Challenges presented in transporting Western Cape based faculty, coaches, and mentors across the vast distance between the SBS campus and remote Eastern Cape venues led to a positive outcome: local mentoring and teaching capacity was developed at an accelerated rate compared to the Western Cape program, and local knowledge of business needs, context, and networks have enriched how SBA entrepreneurs are advised and supported.

Gains have been seen in economic activity: the number of surviving businesses increased, and many Eastern Cape SBA alumni are securing funding, contracts, and accessing a bigger business network within the communities where they operate.

Operating the Development Programme in two distinct geographic regions has benefitted the SBA on many fronts. The socioeconomic diversity of the participants has expanded the teaching material and research conducted to be more inclusive and farther reaching, and the partnership with JoGEDA enabled a larger number of participants to go through the programme without a commensurate requirement to increase SBA staff. Expansion of the Development Programme to a third location in the Western Cape, in partnership with a community-based economic growth organisation there, has shown similar benefits, indicating that the model could be replicated with the proper alignment of vision and shared roles among business education institutions and economic development agencies.

Funding Ecosystems

Traditionally, strategic partnerships between universities and corporations focus on the university performing research and development in exchange for funding and knowledge sharing, with an additional downstream expectation that institutions of higher learning will produce capable future workforces. At the SBA, corporate partnerships are structured to holistically leverage the resources of the companies to produce capacitated entrepreneurs.

Some of the strongest and synergistic partnerships at the SBA are with its anchor financial sponsors. While it cannot be denied that a vital element of the partnerships is financial sponsorship to enable SBA activities, the SBA has expanded these partnerships' mutual benefits through engaging sponsors in programmatic delivery.

Absa[223] and Distell[224] have been stakeholders of the SBA since its inception in 2012. At a basic level, partnering with the SBA supports their corporate social responsibility (CSR) goals. One of Absa's stated key strategic enablers is "playing a shaping role in Africa's growth and sustainability,"[225] including contributing to economic development and promoting social change. (As a financial institution serving domestic clients, Absa's activities are directly tied to SDG Target 8.10, expanding access to banking and financial services.) Distell includes in its mission enriching the communities in which they live and work.[226]

On the corporate culture level, the SBA's approach to holistic partnerships has strengthened its corporate sponsors' employee engagement and connections to communities they serve. Absa and

[223] Absa Bank offers diversified financial services across South Africa and other African countries.

[224] Distell is a multinational business with its roots in South Africa that produces and markets a diverse portfolio of alcoholic brands.

[225] Absa Group, "Who We Are," https://www.absa.africa/absaafrica/about-us/who-we-are/.

[226] Distell, "About Distell," https://www.distell.co.za/home/about/.

Distell, along with other sponsoring corporations, provide staff for SBA workshops, guest lectures, and panels as part of their partnership with the SBA. Over the course of these events, connections have formed between the company representatives and SBA students. Using one's professional skill set to help a local businessperson succeed in an underserved community has been an appealing way to bring satisfaction to one's work that would not likely transpire in a traditional donor-recipient relationship. By involving sponsors in program delivery, sponsor companies cultivate more engaged employees with a stronger understanding of how their work fits in the community, and small-business owners gained practical advice and mentoring from practitioners and grew their professional networks.

On a strategic level, these corporate sponsors benefit from an improved supply chain when local enterprises are strengthened. Upstream, the corporations invest in the development of supplier businesses so that they provide better services farther downstream. This is of particular benefit in developing economies, where supply chains can be thin enough to suppress growth potential of a company. Absa, Distell, and other sponsoring companies have awarded contracts to SBA entrepreneurs, many of whom have used those contracts as springboards to grow their businesses.

Legislative Alignment

Partnerships enable organisations to access expertise and resources more efficiently than developing them on their own. In many contexts, partnerships provide a bridge to expanded environments such as new geographic regions or a different set of customers, or access to a different regulatory environment.

A compelling strategic incentive for corporations to partner with the SBA arises from the legislative framework in South Africa: affirmative action incentives designed to reconcile South Africans and redress the

inequalities of Apartheid. Black Economic Empowerment (BEE) is an integration initiative and legislated programme launched by the South African government to advance economic transformation and enhance economic participation of Black people in the South African economy. BEE compels businesses to integrate Black people in the workspace; to upskill, mentor, and support Black businesses; and to give back to communities impacted by land dispossession. In some industries, companies must meet a minimum threshold of Black ownership to have a license to operate. The greater impact of BEE across the economy is in how it determines eligibility for government contracting and competitiveness for business-to-business contracts. The SBA provides opportunities to gain points through enterprise development and job creation in Black-owned small- to medium-size enterprises; all SBA entrepreneurs' businesses qualify as Black-owned. Depending on the activity and scale of investment, businesses are awarded points which they can claim on their BEE scorecard (B-BBEE). A high B-BBEE scorecard is strategically essential for Absa and Distell as a competitive advantage for negotiating deals and as brand reinforcement.

Through their multi-dimensional partnerships with the SBA, corporations gain a wide range of benefits, including goodwill from corporate social investments, stronger employee engagement, a stronger supply chain overall, including a stronger pool of B-BBEE-compliant service providers, and higher scorecard points by supporting certified upskilling training. The case for the high return on investment from partnering with the SBA is strong, but the SBA is mindful that continuing partnerships with sponsoring companies depend on healthy relationships and strategic alignment with the companies.

Beyond the Degree

Research

As a research institution, SBS seeks to integrate research into all of its activities. In 2015, a research initiative was added to the SBA with the aim to share findings from the SBA's work with the ecosystem of sponsors, small-business communities, and other stakeholders. Research is conducted by SBS faculty members and graduate students, who benefit from a pre-screened population to study. Focus areas under the bigger umbrella of small-business development in Southern Africa have included the benefits of mentorship of small businesses, factors stimulating growth in small businesses, the training and mentorship needs of small-business owners, factors contributing to the success of small and micro businesses and the challenges facing these businesses. The research done by faculty and students at the business school then can be reworked as facts sheets and impact reports, offering practical advice to small business operators.

The relevance of research is also endorsed by the SBA's sponsors. Recently, one sponsor company's board of directors asked for more formal impact reporting of the benefits to programme, highlighting the need to clearly define and measure the impact of the SBA's programmes on stakeholders throughout the programme ecosystem.

SBA Growth Initiative

In addition to access to research insights, alumni of the SBA are supported after they complete the Development Programme. The SBA Growth Initiative offers continuous development opportunities to SBA alumni, with the intention to support participants after program completion. The benefit of such an ongoing support was so clear that it soon became a requirement of sponsors. During the year, workshops, master classes, advanced training, mentorship sessions and networking form part of the Growth Initiative offering. An annual highlight of the

Growth Initiative is Outreach Day, held on the SBS campus, where SBA entrepreneurs and alumni showcase their products and services, listen to experts, join practical workshops and network with the broader SBA community.

In its first decade, the Small Business Academy has been able to establish and increase its impact largely by intentionally engaging mutually supportive partnerships to access the potential existing in communities, the public and private sectors, and within the legislative framework. These partnerships have directly contributed to a strengthened ecosystem where small businesses contribute to the economy through becoming established, producing higher profit and creating jobs. Each group took a risk in participating in the SBA by investing human and financial resources for a purpose not squarely within their core business. They nevertheless had the foresight to see that intervention was needed in order for micro enterprises to better play their role in the South African economy.

SBA Entrepreneur Spotlight: Strength in Partnerships at The Women in Business Zone

Alumni of the SBA have demonstrated the power of mutually supportive partnerships contributing to full and productive employment with The Women in Business Zone, an organisation established to empower women making their way in business in one of South Africa's largest townships[227]. Their story embodies entrepreneurial efforts to bring full and productive employment and decent work to women and men (SDG Target 8.5) through collective support and resourcing (SDG Target 17.17).

Sisters Wente and Letticia Ntaka and fellow entrepreneur Xoliswa Tsholoba set up the Women in Business Zone to pool their collective

[227] Adapted from Linda Christensen, "SBA Women in Business Zone," (SBS internal document, 2018).

skills, knowledge and sometimes finances, providing a sounding board on business challenges and enabling them to bid for larger-scale projects. Their efforts were a natural extension of sourcing for themselves what their businesses needed.

> "We started the Zone because we saw that failure in our kind of business, and giving up on your dreams, is easy as there is no support base where you can talk about your problems and get advice from people who are walking the same road as you," say the women.

A recent success of the trio's collaborative approach was becoming the first black women to install fibre-optic cables in Khayelitsha. Their first contract for 500m of trenching and pipe-laying in 2020 was so well executed that it led to them being contracted for more work and employing approximately 50 people on the project.

Sharing and working cooperatively in a competitive environment is central to the idea of the Women in Business Zone, and all three women agree that supporting and learning from each other has not only strengthened their self-esteem as businesswomen but also contributed to growing their individual businesses. Letticia Ntaka, who has a catering business, explains: "We each have our own separate businesses that we focus on, but there are a lot of challenges for women in business, and we found that working together, sharing ideas, supporting and advising each other, just makes it easier."

She says their group approach strengthens tender and project bids, and applications to government for support such as training or funding. "As a woman in business, you can't just focus on only one thing – you must always be on the lookout for opportunities and be willing to change direction if what you are doing is not working," says Letticia.

This means that while she focuses on catering, her sister Wente on cleaning and Xoliswa on construction, if a big project comes along, all

will multi-task and pitch in to deliver to the client's needs. This can even mean one of the women providing bridging finance to get another's contract off the ground, or lending equipment to each other to save costs on hiring.

The Zone members meet monthly to exchange ideas and advice, set up their own training workshops and mentoring for other women in business in the area, and bring lessons back to the group from workshops and training they have attended outside the township.

They make a point of hiring unemployed women on their projects, and for those interested in setting up their own businesses, the group walks them through the process of business registration and compliance and offers mentoring. "Other disadvantaged women in Khayelitsha can see that it is possible to do something – you don't have to sit at home just because you don't have a job. We want other women to see the strength we have working as a team, and the fact that not having a university education didn't stop us from being businesswomen and making a difference in our community," says Wente.

With their motto "giving up is not an option", all three highlight the financial knowledge and marketing skills they have gained through the SBA programme, and all three have big dreams to take their businesses further.

Training for Skill: Upskilling Entrepreneurs

Recent decades have seen a proliferation in entrepreneurial education programmes. While consensus has yet to been reached on standard frameworks or recommended curriculum to deploy that would capacitate entrepreneurs most effectively, scholars are coming closer to agreement about the essential competencies and knowledge that enable

entrepreneurial success.[228] Broadly acknowledged is that local context must be integrated into efforts to capacitate entrepreneurs.[229]

Local context dictates the gap between reality and goals, particularly for SMMEs. SMME entrepreneurs operate within the local economic landscape, with local market opportunities and challenges. In the South African context, massive inequalities, corruption, and extremely high unemployment can make the promise of decent work and economic growth (SDG8) seem impossibly far for a single entrepreneur.

The SBA seeks to lessen the gap between reality and the promise of SDG8 with a relevant, practical learning experience for participants such that they can strengthen their businesses. The effort has required adjustments and programmatic shifts through the years. While the academic training curriculum covering business knowledge has been relatively consistent and well-received, as would be expected from an experienced business school, the structure, timing, and flow of the program has been regularly modified to accommodate busy entrepreneurs who must manage their businesses over the rigorous, eight-month long Development Programme. Programmatic agility has been essential for meeting the SBA's goal of upskilling and uplifting small-business entrepreneurs.

Development Programme Target Population

The target population of the SBA is owners of SMMEs from and in low-income communities. As mentioned previously, SBS anticipated differences in baseline knowledge between entrepreneurs from low-income communities and its graduate-level and executive students. Establishing appropriate criteria for participants of the SBA was an important step to screen for a baseline of education attainment, stage of

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[228] Carvalho and Franco, "The Importance of Partnerships in Promoting Entrepreneurship Education," 1.

[229] Stam and Spigel, "Entrepreneurial ecosystems," 11.

business growth, and personal motivation that could help participants to succeed in the programme.

Current requirements for applicants include the following:

- Education level: the entrepreneur should be in possession of at least a Grade 12 or Matric certificate (a high school diploma completing secondary school),
- Business maturity: their business must have been in operation for at least 2 years, and
- Geographic location: the entrepreneur should be operating his/her business in and reside in one of the chosen low-income areas.

While the prerequisites establish one type of baseline for participants, the applicant screening process is essential to identify candidates who would benefit from and have sufficient motivation to complete the development programme. All applications are reviewed by the head of the SBA after an aptitude test has been written by all applicants. In some cases, where there is doubt about the circumstances of individuals, interviews are conducted. Deserving candidates who do not meet all the requirements, for example those who are not in possession of a matric certificate, are all interviewed as part of the University's Recognition for Prior Learning process, to ascertain if they meet the criteria for exceptions.

Over time, SBA administration has found the most revealing aspect of the application is a set of opinion questions asking applicants for their views of business, personal, and non-financial success. Regardless of writing ability, the answers often reveal clues about the applicant's determination, grit, and motivations for wanting to enrol in the programme. Through these short essays it is possible to determine whether applicants have the support structure and whether lecturers and mentors should spend more time and effort to keep them motivated and on track towards the successful completion of the programme.

Another crucial element of attracting appropriate candidates is programme cost. SMME entrepreneurs in low-income communities often are not in positions to make large cash outlays, least of all for a personal development expense. Accordingly, the fee is set low enough to be accessible for the target market but significant enough to encourage commitment to the programme, with sponsors funding the remaining program cost. In 2021, the total programme fee was R2,550 (about €145 at the exchange rate of 17.62 South African Rands per Euro). To ease cash flow concerns, fees are payable in four instalments over the course of the programme.

The SBA conducts outreach to attract applicants through marketing in local media, networking through business organisations, and through alumni networks. Open Days are held in the catchment areas of the three programmes towards the end of each year to share information about the Development Programme and to assist candidates with the application process. When possible, the SBA presents the programme at business association summits. Many candidates often come from networks of SBA alumni—alumni motivate other business owners to apply by sharing their journey with the SBA and how it assisted them in running their businesses more efficiently. Alumni success stories are also shared in newspapers, magazines, television, and radio shows.

Development Programme: Structure and Curriculum

The Development Programme's generalist curriculum aims to cover all the basic business knowledge and competencies that an entrepreneur would need to run a business effectively. Research in collaboration with experts at Stellenbosch University and providers of funding for other entrepreneurship programmes for start-ups guided the SBA leadership in designing the programme. The research outcomes showed that start-ups were supported by an array of funders and incubators, while small businesses that have been operating for more than a year were left to

their own devices. Discussions with sponsors and business owners showed a frustration in the lack of affordable advice and motivational support in existing structures. Consequently, the SBA leadership collaborated with the head of the Management Coaching programme at SBS to add mentoring to the learning and development journey of SBA programme participants.

The SBA's development programme is certified by SBS's Teaching and Learning function, as well as Stellenbosch University's Short Course division. Compared to similar initiatives, SBA Development Programme is unique in its focus on experiential learning, which plays a critical role in the learning process of entrepreneurs.[230] Each entrepreneur uses their own business for practical assignments to apply what they are learning, broadening the learning experience beyond theoretical knowledge to know-how.[231]

The training modules listed below blend an academic grounding and practical application to the entrepreneur's business situation. Each module builds on the next, capacitating the entrepreneur to be able to develop and professionally present a business plan for their business.

- **Business Essentials**: Core knowledge that an entrepreneur needs to manage a business, including how businesses function, management functions such as operations management, and human resources management. This module is designed to specifically address the challenges that entrepreneurs experience. Practical work includes setting

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[230] Per Blenker, Poul Dreisler, Helle Meibom Færgemann, and John Kjeldsen. A Framework for Developing Entrepreneurship Education in a University Context. *International Journal of Entrepreneurship and Small Business*, 5, no. 1 (2013): 45-63.

[231] Lecler, C. J., and J. Kinghorn. Dynamic Capabilities, Expert and Entrepreneurial Learning. *South African Journal of Business Management* 45, no. 2 (2014): 65-81, https://doi.org/10.4102/ sajesbm.v11i1.214.

a vision, mission, and short-, medium- and long-term goals, and a SWOT (strengths, weaknesses, opportunities and threats) analysis.

- **Financial Planning**: Upon completion of this module, entrepreneurs should be able to set up and interpret budgets, cash flow statements, income statements and balance sheets, establish breakeven points, and use ratios to make financial decisions. The importance of keeping financial records of transactions is highlighted. Practical work includes setting up a full financial plan for the business, a risk analysis, and mitigation plan for those risks.
- **Marketing**: The module covers conducting market research, identifying market trends that influence a small business, and establishing the needs of target markets. Tools for promoting businesses and products are discussed in detail, as is the importance of developing a brand with a competitive advantage. Practical work includes a marketing plan with a feasible marketing budget.
- **Business plan development**: This is the final module, guiding the entrepreneur to set up a business plan covering all aspects of their business that can be used for access to funding. Entrepreneurs are given an opportunity to present the business plan to a panel of programme sponsors, financial institution representatives, industry leaders, and academics.

Structure and Curriculum Lessons Learned

SBA participants have provided valuable insights in ongoing feedback and in program impact assessments[232] that led to improvements in the SBA programming over the years. Some changes were made in the same cycle as the feedback was received, while other changes have taken longer to implement. Alumni feedback has been supplemented by observations from lecturers and mentors of the

[232] Marietjie Theron-Wepener and Charlene Gerber, "Small Business Academy Impact Study of SBA Alumni 2015-2019," SBS internal document, (2020).

programme who engage with SBA students on an ongoing basis, producing findings resulting in adaptations to the programme.

Academic challenges faced by SBA entrepreneurs revealed disparities in academic preparedness, which was more tied to the quality of their previous education rather than the qualifications they held. South Africa has one of the most unequal education systems in the world;[233] most SBA entrepreneurs attended overcrowded government schools in low-income, disadvantaged communities (highlighting the urgency and importance of SDG 4,[234] quality education). Many participants found they were not prepared for how assignments should be written, how to use referencing, or did not realise that plagiarism is a serious offence. Many also faced difficulty absorbing business theory, business jargon, and conceptualising it all to communicate effectively in the business sector. These challenges have been compounded by lack of access to academic support at home or in their business environments. In response, lecturers, mentors and coaches individually connect SBA entrepreneurs to relevant assistance as needed. SBA alumni have gone on to become resources for other entrepreneurs, providing advice and sharing their earned knowledge (a deeper analysis of mentoring and coaching follows later in this chapter.)

Entrepreneurs sought guidance on practical issues not covered in the curriculum, such as accessing funding, business insurance, contract reading, B-BEEE compliance, ethics and values in business, writing skills, and software tutorials. In place since the beginning and a core part of the curriculum was workshops that are offered on requested topics, presented by experts in the specific fields. Furthermore, the SBA

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[233] Amnesty International, "Broken and Unequal: The State of Education in South Africa," (2020): 16, https://www.amnesty.org/en/documents/afr53/1705/2020/en/

[234] United Nations, Department of Economic and Social Affairs, "Sustainable Development Goal 4," https://sdgs.un.org/goals/goal4

collaborates with government agencies and large businesses to include SBA entrepreneurs in relevant external workshops which have an added benefit of networking opportunities. The addition of these workshops has been very well received, filling entrepreneurs' knowledge gaps and expanding their professional networks. Coordinating and fitting workshops into a tight schedule poses a logistical challenge, but the workshops have become an essential driver of competency development for SBA entrepreneurs and have an additional benefit of strengthening stakeholder ties to the SBA.

The workshop topics requested echo many of the industry challenges the SBA entrepreneurs face. Many of these challenges are common to entrepreneurs across the globe, such as access to finance, unfamiliarity with industry regulations, managing risk, and learning management skills, but some are intensified in the South African context, where crime and corruption have derailed opportunities for entrepreneurs. Crime is an ongoing reality in South Africa, believed to be a prominent cause for the failure of some SBA alumni businesses that have endured burglary, assault, looting, fraud, corruption, and even murder. Unfortunately, the Western and Eastern Cape communities in which the SBA entrepreneurs operate are known as crime hotspots with low police presence.[235] These unfortunate realities highlight the interdependence of the SDGs: Goal 16[236] calls for peaceful, secure, and accountable societies, the achievement of which would facilitate strengthened economic growth.

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[235] Donovan Adams, "Exploring Factors that Lead to Failure or Non-Growth of Small Businesses in the Western Cape," (unpublished student research paper, 2017). Summary available at https://www.stellenboschbusiness.ac.za/exploring-factors-lead-failure-or-non-growth-small-businesses-western-cape.

[236] United Nations, Department of Economic and Social Affairs, "Sustainable Development Goal 16," https://sdgs.un.org/goals/goal16.

While many of the SBA's higher impact program adjustments have been about what to teach, an important adjustment made was when to teach. Time management and scheduling have proven difficult for SBA entrepreneurs, as tending a demanding business and addressing unexpected work emergencies occupied entrepreneurs' attention and time, making full participation in lectures and timely completion of assignments challenging. The training schedule of the five block weeks used to run from early in the morning until evening, but in response to entrepreneur feedback the schedule was adjusted to end mid-afternoon so that the entrepreneurs could attend to their businesses before the end of the workday and thus focus more fully on the programme while in attendance.

Adjusting the training timetable and adding more workshops to the programme has emphasized how big a role proximity of training venues to workplaces plays for enabling fuller participation in the programme. The easier it is to get to and from class and work and the more that schedules adjust to the reality that both study and work must fit in one day, the more successful students will be at being able to balance and achieve in the course and at work. While the Covid-19 pandemic eased some of the commuting needs when lectures and workshops were offered virtually, it highlighted how effective in-person learning and networking is for this population for whom focused attention is crucial for comprehension of new and complex topics. It also accentuated how reliable fast internet and dedicated quiet spaces to sit through hours of training can be hard to find for the entrepreneurs. These observations indicate that scaling the SBA to more locations will require strong partners who can coordinate local programming and have sufficient resources to support student activities on site.

Enterprise Evolution

The shift in the types of enterprises run by SBA entrepreneurs over time has been unexpected. An assumption made about small businesses in low-income communities had been that the businesses would cater to basic needs such as edu-care, transportation, food trading. The cycles of the SBA Development Programme to date have revealed that the types of businesses run by program participants have become more complex and varied over time (see Figure 2).

VARIATION OF ENTREPRENEURS ON THE PROGRAMME

FIRST INTAKE IN WESTERN CAPE 2013	LATEST INTAKE WESTERN CAPE 2020	FIRST INTAKE IN EASTERN CAPE 2016	LATEST INTAKE IN EASTERN CAPE 2020
• Edu care • Catering • Waste Management • Retail • Manufacturing • Transport • Entertainment	• Funeral services • Catering • Beauty • Transport • Construction • Accomodation • Automotive • ICT services • Coffe shop • Restaurant • Reycling • Music School • Plumbing • Fashion design • Herbal medicine	• Farming • Security services • Retail • Accontingserices • Catering • Construction • Travel agency • Automotive • Public relations	• Funeral services • Catering • Coffee shop • Transport • Retail • Construction • Branding and printing • Accomodation • Antique restoration • Fashion design • Farming • Training • Travel agency

Figure 2: Types of SBA Enterprises, adapted from Esther Franzsen.

In response, the Development Programme curriculum has had to adjust to meet entrepreneurs to support more sophisticated business models and a broader range of industries. Consequently, the network of workshop facilitators has had to expand to cover new requests for topics. SBA alumni are often brought in to run workshops, with their advantage of first-hand experience in the programme and in running a business in the same communities as current students.

SBA Entrepreneur Spotlight: Learning to See the Future: Amani Communications

While effective programming to develop entrepreneurial competencies requires thoughtful design and continual adaptation, capacitated SBA entrepreneurs immediately apply their learning to their businesses[237]. Bomikazi Nkolongwane, owner of Amani Communications, a 100% female Black-owned strategic communications company in the Eastern Cape, has shown how her skills and knowledge have positively impacted her business.

Bomikazi grew up in a small town in the Eastern Cape and studied political science before starting her career as a journalist and later as communications specialist for municipalities. Two years after founding Amani Communications, Bomikazi enrolled in the SBA Development Programme. She was drawn to the programme's combination of practical and academic business knowledge.

When founding her company, Bomikazi had "jumped headfirst without knowing how to run a business." She shared that the programme taught her how to believe in herself and the growth potential of her business. "The Development Programme assisted me to grow a successful business. As a business owner, I have grown in leaps and bounds: I am now adaptive and embrace change. The environment I operate in is changing at a rapid pace and I do not get left behind," she explained. Amani Communications has expanded in size and geographic reach since the company's founding; her client base has increased 30%, including JoGEDA, the Eastern Cape SBA sponsor. The growth has enabled the creation of two full-time jobs: "I realised that if I apply some strategic thought, I will be able to grow my business to such an extent that I can employ people permanently and ultimately become a

[237] Adapted from Linda Christensen, "Amani Communications," (SBS internal document, 2017).

force to reckon with in the public relations and communications industry," she explained.

After winning top student in her SBA Development Programme group, Bomikazi was inspired to continue to grow academically as well. In 2020, she graduated with a Post-Graduate Diploma in Futures Studies at SBS, which has equipped her to deal with better with uncertainty and to make the impact of the Covid-19 pandemic bearable. She now credits her learning at SBS for her company's survival.

Bomikazi says that having her own business is enormously gratifying, and to look back on the success that she has managed over such a short time, a humbling experience. "I have realised that you should never give up and never doubt yourself."

Mentoring and Coaching for Sustainability

A persistent challenge for entrepreneurship capacitation programmes, even for those with quality curricula and adequate resourcing, is the reliable transformation of knowledge into practice. Variability in local contexts and individual capabilities can make finding the right level to pitch teaching a programmatic challenge, while the sheer number of variables at play in the entrepreneurial ecosystem make it hard to prepare students for all possible entrepreneurial challenges.[238] The question for the SBA was how to better assist SBA entrepreneurs with putting their newly developed competencies to work, better ensuring sustainability of the entrepreneur and their enterprises.

The Development Programme's inclusion of formalised mentoring has been found to have a profound and enduring impact on SBA entrepreneurs and their businesses. Providing trained, individualised

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[238] Nathalie Duval-Couetil. "Assessing the impact of entrepreneurship education programs: Challenges and approaches." *Journal of Small Business Management* 51, no. 3 (2013): 394-409.

one-on-one support has deepened the Development Programme's effectiveness in upskilling entrepreneurs, facilitating individual development as well as strengthening acquisition of entrepreneurial competencies.[239] SBS research has found that mentorship and coaching support had a positive impact on SBA entrepreneur development during the SBA development programme: 100% of participating SBA alumni respondents found the mentoring and coaching component extremely valuable, particularly its support in implementing new skills and knowledge.[240]

During their tenure in the Development Programme, SBA entrepreneurs are under pressure, juggling their businesses and personal lives while participating in a fast-paced development programme packed with unfamiliar material and demanding assignments. The solitary nature of running an SMME often limits opportunities to learn through observation and feedback.[241] While the experiential learning approach used in the Development Programme has proven useful for applying acquired knowledge, its effectiveness can be hampered by factors such as time constraints and inadequate academic preparedness. With the formalised mentorship component of the SBA development programme,

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[239] Elements of this section pull from a deeper investigation of the impacts of coaching and mentoring in the SBA: Salomé van Coller-Peter and J. P. Cronjé. "The Contribution of Coaching and Mentoring to the Development of Participants in Entrepreneurial Development Programmes." International Journal of Evidence Based Coaching and Mentoring 18, no. 2 (2020): 51-67.

[240] Henem van Staden, "Exploring Small Business Owners' Perceptions of Factors Required to Achieve Business Success," (unpublished student research paper, 2017). Summary available at https://www.stellenboschbusiness.ac.za/management-review/usb_insights/insight-success-factors-of-small-business-owners-in-sa/

[241] Etienne St-Jean. "Mentoring as Professional Development for Novice Entrepreneurs: Maximizing the Learning." *International Journal of Training and Development* 16, no. 3 (2012): 200-216.

SBA entrepreneurs have gained a personalised bridging support for translating and contextualising theory into practice.

Currently, SBA development programme participants spend a minimum of 12 hours over the eight-month course being supported by a matched, qualified mentor who has been specially trained to support SBA entrepreneurs, with the goal of assisting with the transfer of learning from the classroom to entrepreneur's businesses. Mentors, most of whom are alumni across SBS's programmes, including the Coaching programme, provide tailored, responsive support to each SBA entrepreneur's needs in the moment.

Mentor support activities include academic support, such as revising course material and reviewing assignments before submission; business skills support, such as offering advice and connections for business logistics and staffing; and expanding mentee networks through introductions to mentor business and support networks.

SBA entrepreneurs also access other forms of engaged learning—current SBS and visiting international students conduct case studies and research assignments on SBA entrepreneurs' businesses and/or assist with practical needs such as web site development, writing marketing plans, or financial systems. Additionally, informal mentorship is often developed through relationships created in workshops, sponsor organisations, and the broader SBA networks. The key differentiator of the formal mentorship component is that formal mentors are trained and use a structured approach to the mentorship with commitments made by both mentor and mentee, whereas ad hoc mentorships are informal and not required.

A brief note about how the SBA differentiates coaching from mentoring. The two terms are often used interchangeably in practice, given the significant overlaps in purpose to help an individual set goals and assess alignment with those goals. Mentoring is perceived as less formal in nature, with mentors sharing advice, experience, and wisdom

with mentees,[242] while coaching tends to be more structured, utilising question frameworks and models focused on performance and alignment with business objectives.[243] In the SBA context, mentors are often business practitioners, while coaches are formally trained in management coaching. SBA entrepreneurs engage with both mentors and coaches.

Mentoring and Coaching Lessons Learned

Personalised support of qualified mentors has enabled SBA entrepreneurs to achieve stronger business success, confidence, and learning retention. Beyond improving academic performance, coaching and mentoring have been found to contribute positively to a wide range of benefits for SBA entrepreneurs, including relationship building and trust, discovering their own solutions, creating long-term vision, translating theory into practice, improved business performance, exposure to networks, and successful completion of the SBA development programme.[244]

Literature supports these findings: SMME business owners can use coaching to efficiently unlock their learning ability,[245] while the

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[242] Sunny Stout-Rostron. *Leadership Coaching for Results: Cutting-edge practices for coach and client.* Randburg: Knowres Publishing (2014).

[243] Alison Walker-Fraser. "An HR Perspective on Executive Coaching for Organisational Learning." International Journal of Evidence Based Coaching & Mentoring 9, no. 2 (2011), 67-78.

[244] S. van Coller-Peter and J. P. Cronjé. "The Contribution of Coaching and Mentoring to the Development of Participants in Entrepreneurial Development Programmes."

[245] Gareth Bell. "Coaching is Key to SME Success: International business coach Peter Boolkah explains why the right coach can take your business to the next level." *Development and learning in organizations: An International journal* (2014): 35-37.

coaching relationship can create a learning context that equips entrepreneurs with the skill to find immediate solutions while solving problems on their own and to better address future problems that might arise.[246] Within SMME contexts, coaching can offer a unique contribution to the personal development—particularly improved self-esteem and confidence—in SMME entrepreneurs.[247] Additionally, accessing an expanded professional and support network through coaches and mentors has been a lasting, valuable benefit for personal leadership and business development.[248]

The SBA's coaching and mentoring component has benefitted from a partnership with the SBS's Management Coaching program, which was involved in developing the mentorship component's structure and continues to train SBA mentors and mentees in each cycle. Success in coaching and mentoring is highly dependent on the quality of the relationship, where trust, commitment and active involvement are required; a formal training program to prepare mentors and mentees both has been valuable to set ground rules and establish expectations for how the mentorship will work. The minimum number of hours ensured that busy professionals would prioritise the mentorship work, particularly with the reflection and goal setting work required of mentees.

Developing coaching and mentoring skills in mentors has been a significant focus of training, particularly as mentors often return to support mentees in subsequent SBA cycles. Mentors have acknowledged

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[246] Josée Audet and Paul Couteret. "Coaching the Entrepreneur: Features and Success Factors". Journal of Small Business and Enterprise Development (2012): 515-531.

[247] Leitch, McMullan, and Harrison, "Leadership Development in SMEs: An Action Learning Approach."

[248] Amandla Development. (2009). *Education and Development in South Africa,* http://www.amandladevelopment.org/images/amandla_whitepaper2.pdf

that better coaching skills and experience improved their mentorship experiences, giving them confidence to establish the relationship and better navigate through difficult periods in the relationships. Mentors can more easily develop their understanding of the mentees with appropriate questioning and listening skills, making their support more relevant and grounded in the mentee's experience.

The focus on understanding the mentee as a person first before addressing business needs has been foundational for establishing the mentorship relationship and strengthening self-esteem in the mentee so that they grew more confident about themselves and their abilities as entrepreneurs. Placing the mentees at the centre of the mentorship relationship underpins the mentor's commitment to the mentee as a whole person, not just as a student or business owner, resulting in mentees feeling more valued and appreciated.

Recruiting sufficient numbers of mentors has at times been a challenge. In some cycles, some mentors were paired with more than one mentee, which is not ideal given the individual focus and time commitment needed in a successful mentorship. In response, the SBA began to carefully select SBA alumni to become mentor, beginning in the Eastern Cape where SBS networks are smaller. These SBA alumni, chosen for strong performance in the Development Programme, demonstrated emotional intelligence, and strong business performance, have proven to be effective mentors, suggesting that corporate experience and higher education degrees may not be necessary to provide quality mentorship.

SBA Entrepreneur Spotlight: Bringing Bread and Inspiration to Gugulethu

The SBA has observed how personalised coaching and mentoring can have a profound impact on entrepreneurs and their business success,

easing the path between learning and applying competencies[249]. In many cases, the positive experience with coaching and mentoring inspires entrepreneurs to support and inspire others as a mentor.

Thembile Gcukumeni, owner of Thembile's Breadshop in Gugulethu, a township near Cape Town, is not only an artisan baker and business owner but also a motivational speaker, sharing hope and inspiration to many within his community.

Thembile has baked thousands of loaves for neighbours, local schools, churches and the community from his bread shop which he opened in 2014. But life has certainly not been easy for Thembile. This boy-scout turned mountaineer and outdoor experiential educator had a major set-back with a crippling stroke a few years ago that affected the left side of his body and his speech.

> "I received assistance from an institution providing training in baking as well as the necessary equipment which gave me a new direction in life. My bread shop is not only there for serving those that are hungry. It's a safe haven of healing, hope and being resilient. In the end bread has saved my life and served many in my neighbourhood and I am thankful for that opportunity,"

Thembile explained, adding,

> "today I bake bread with the use of only one hand. I don't see myself as a disabled person and I aim to inspire others who think their situation is dire that there is hope to turn things around."

Thembile employs two part-time staff members and has plans to expand his business. The business and marketing knowledge he gained in the SBA helped him to be more focused, conscious and targeted.

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[249] Adapted from Linda Christensen, "Bringing Bread and Inspiration to Gugulethu," (SBS internal document, 2016).

> "I have the vision to one day distribute to schools and senior citizens in my area and act as an ambassador for healthy whole meal baked products," said Thembile. "I am also passionate about enterprise development in South Africa. I believe that small-scale enterprises that reflect a person's passion are one of the routes of economic success in our country."

Thembile's goals include mentoring up-and-coming entrepreneurs on how to use wood fired ovens to set up their own small franchises, to create an infrastructure at his shop to host groups and introduce the community to baking and to own a vehicle to reach untouched markets. But his biggest goal is to be part of the series of TED talks to share how he has overcome his personal life challenges on an international stage.

Impacts of the SBA on Entrepreneurs, their Businesses, and SDG 8

The impacts of the Development Programme on its participating entrepreneurs have been academic, financial, and personal. In its first eight years in the Western Cape and four in the Eastern Cape, 235 entrepreneurs successfully completed the programme. SBA alumni have kept in close contact through the SBA Growth Initiative, alumni mentoring, networking events, and workshop presentations, which has enabled the SBA to keep record of the success stories and evaluate the impact that the programme has on participants.

Results indicate that the SBA is making a strong contribution toward SDG 8 by supporting entrepreneurs to formalise, strengthen, and growth their businesses, which then increases GDP, creates jobs, and in many cases increases economic productivity. These results are reflected in quantifiable numbers, such as jobs created, and in qualitative improvements, such as improvements in personal qualities that have

been shown to contribute to successful entrepreneurship and community investment (SDG Target 8.3).

By supporting entrepreneurs to grow their businesses such that jobs are created, the SBA has contributed to progress for full and productive employment (SDG Target 8.5). The SBA's impact studies have revealed an increase of 98% in full-time employment, a 187% increase in part-time employment and a 67% increase in revenue for the small businesses that received training at the SBA.[250] By example, one SBA entrepreneur with a swimming school entered the Development Programme in 2012 with 27 swimmers; seven years after completing the programme, she had 748 swimmers and six new professionally trained swim coach employees. The job creation in SBA-trained enterprises is notable, particularly in the South African context where SMMEs represent nearly 98.5% of formal firms in the economy but only account for 28% of jobs created, as compared to 60%-70% internationally,[251] and where small businesses' share of total employment fell from 64% in 2008 to 55% in 2015.[252]

South Africa's economic growth rates have lagged the level required to raise South African living standards, the low growth levels attributed to, among other things, insufficiently building capabilities of its

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[250] Theron-Wepener and Gerber, "Small Business Academy Impact Study of SBA Alumni 2015-2019."

[251] Small Business Institute, "The Number of Formal Micro, Small & Medium Businesses in South Africa," (2019), https://www.smallbusinessinstitute.co.za/wp-content/uploads/2019/01/SBIbaselineStudyAlertfinal.pdf.

[252] South Africa, National Planning Commission, "Economic Progress Towards the National Development
Plan's Vision 2030," (2020): 16. https://www.nationalplanning.commission.org.za/assets/Documents/Review%20of%20Economic%20Progress%20NPC%20Dec%202020.pdf

people.[253] Feedback from SBA alumni has shown that their businesses perform better after they went through the course. Of particular success has been the increased self-efficacy of the entrepreneurs, most of whom have overcome systemic exclusion and poverty to become creators and active contributors to productive employment, decent work and a sustainable economy. SBA alumni have grown their businesses despite unfavourable economic conditions and declining infrastructure—anecdotes abound of businesses expanding, opening new branches, and increasing market share after conducting needs analysis, understanding their target markets, and improving their products and services. Business management and administration has improved, with the entrepreneurs upgrading their record keeping and tax compliance, increasing staff retention, and successfully bidding for supplier contracts with government and large businesses.

SBA alumni businesses have become more formalised with increased knowledge by the business owners, with many positive resulting outcomes such as increased productivity and expansion through innovation and high-value activities (SDG Target 8.2, higher levels of economic productivity), improved access to finance (SDG Target 8.10, expanded access to banking and financial services), contributing to better labour conditions with stronger compliance with labour regulations (SDG Targets 8.5 through 8.8, labour rights). Strengthened locally-owned businesses are better positioned to benefit their communities through local reinvestment and higher accountability to the community for environmental and social behaviour and increased demand for local financial institutions (Target 8.10).

Risk mitigation has become a conscious and focused activity in SBA alumni businesses, enabling them to increase their rates of survival and contribute toward higher levels of economic productivity (SDG Target

[253] South Africa, National Planning Commission, "Economic Progress" (2020): 32.

8.2) and resource efficiency (SDG Target 8.4) despite increasing social and economic uncertainty and governmental underinvestment. In South Africa, persistent scheduled power outages can have a devastating influence on the success and growth of businesses. When enterprises cannot reliably operate machinery, maintain product temperatures, or run electronic payments, business suffers; many SBA entrepreneurs have learned to plan accordingly and build workaround solutions. In addition to power outages, droughts in the Western and Eastern Cape over the past few years could not be ignored by farmers and other businesses reliant on water. The successful swimming school owner Rushana Hartnick reflected, "by analysing risks and giving attention to risk mitigation during the programme, I realized I had to act immediately to secure alternative sources of water supply before it became a problem in Cape Town. We need to put fresh water in the pool on a weekly basis to prevent infections."[254]

Economic development's dependence on entrepreneurial development is well established, yet the importance of building confidence in entrepreneurship as a viable and desirable professional path is often underemphasized.[255] SBA program staff and mentors have observed SBA entrepreneurs transforming from withdrawn and shy to proud business owners who confidently share their passion with others and create interest in their businesses and in being business owners. A supportive environment and increased self-efficacy have been found to breed entrepreneurial success,[256] strengthening the linkages between the

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[254] Adapted from Linda Christensen, "Big Ideas from Little Mermaids," (SBS internal document, 2021).

[255] Mike Herrington, Jacqui Kew, Penny Kew, and Global Entrepreneurship Monitor. Tracking Entrepreneurship in South Africa: A GEM perspective. South Africa: Graduate School of Business, University of Cape Town (2010): 15.

[256] Chao C. Chen, Patricia Gene Greene, and Ann Crick. "Does Entrepreneurial Self-Efficacy Distinguish Entrepreneurs from Managers?" *Journal of Business*

SBA activities to support entrepreneurial success and SDG 8's intentions for improved economic growth and job creation. SBA Alumna, Aashiqa Essop, owner of an automotive electronic workshop, captured a common sentiment: "The course has given me so much confidence, and I have been able to apply all the skills I've learnt to our business."[257]

Improved self-efficacy has not only improved business outcomes for SBA alumni. Some alumni, particularly women, have gained confidence in their academic abilities and been motivated to pursue advanced degrees including post-graduate diplomas,[258] undergraduate degrees, and master's degrees in subjects including business administration, entrepreneurship, and futures studies, contributing to access to technical, vocational, and tertiary education (SDG Target 4.3).

Conclusion

The Small Business Academy's creation was motivated by Stellenbosch Business School's desire to expand access to business and management education to an otherwise underserved population of small-business owners. The experience of hundreds of SMME entrepreneurs over the years has shown that the SBA has become a reliable educational vehicle, fulfilling its mission to make a difference to the lives and businesses of small-business owners in low-income communities, meeting SBS's mission to develop responsible leaders who positively impact society through knowledge advancement and transformative learning. In capacitating entrepreneurs to strengthen their

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Venturing 13, no. 4 (1998): 295-316. https://doi.org/10.1016/S0883-9026(97)00029-3

[257] Linda Christensen, "Small Business Woman Receives Top Award from USB" (SBS internal document, 2015).

businesses, the SBA plays a role in improving economic growth and decent work as set forth in SDG 8. Key to its enduring relevance has been the SBA's continual adaptation of its offering to better meet the needs of its students and integration of partnerships for program deployment.

The positive impact of the SBA, while replicable, takes both time and investment to scale. Successful capacitation of SMME entrepreneurs from underserved communities must be locally based, individualised, and responsive to evolving needs. While effective knowledge delivery and a formal certificate from a globally accredited institution are important factors for candidate recruitment and program success, the practical knowledge transfer and increase in self-efficacy that make the difference for the SBA entrepreneurs come about through personal mentoring and supplemental learning opportunities such as workshops and focused networking events. Skilled program staff are essential to manage the array of relationships (sponsors, academics, governmental agencies, mentors, and local business networks, etc.) and complicated logistical coordination of program delivery. Adequate funding is needed to cover staffing and program operation, highlighting again the importance of establishing and sustaining mutually beneficial relationships with sponsors and of demonstrating impact of the programme. Even with compelling evidence of the benefits to sponsors, the economy, and society as a whole, capacitation programmes such as the SBA are at perpetual risk of shifts in funding priorities.

While the SBA is not a high-volume training program, it has provided meaningful and enduring support to entrepreneurs who operate in extremely challenging landscapes. SMMEs struggle to thrive without supportive education and stronger business ecosystems, particularly in a languishing economic environment. In various reports on South Africa's progress toward the SDGs, government officials call upon partnerships and collaboration as essential to build a strong and resilient economy.

Through the SBA, SBS has been able to leverage partnerships with corporations and economic development agencies to support stronger businesses through upskilling and strengthening SMME entrepreneurs who then have strengthened their businesses.

Achieving the bold targets for 2030 set forth in South Africa's National Development Plan and the Sustainable Development Goals can seem unattainable, but SBA entrepreneurs are beating the odds with their successes. Every day, they contribute to a stronger economy and their communities through tirelessly improving their businesses, knowing they have the support of the entire SBA ecosystem behind them.

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9

RESPONSIBLE CONSUMPTION AND PRODUCTION (RCP)

Daniel Coria, Sabrina N. Hernández Guiance

Keywords

SDGs; Ethical consumption; Ethical production; Cleaner Production; Energy Efficiency; PYMEs; Argentine Republic.

Abstract

The University of Centro Educativo Latinoamericano (UCEL), related to the Argentina Methodist Evangelical Church (IEMA), works responsibly and with commitment to achieve the United Nations' Sustainable Development Goals (SDGs) and has the SDG 12 in particular focus*.

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Introduction

It is well known that Sustainable Development is the type of development that satisfies people's current needs without compromising the capacity of future generations to satisfy theirs. In this context, the United Nations Organization established a series of so-called Sustainable Development Goals (SDGs), which are a call to action by all countries to eradicate poverty and protect the planet as well as to guarantee peace and prosperity.

Within this list is objective No. 12, which is Responsible Consumption and Production (PCR). It literally says: "Guarantee sustainable patterns of consumption and production". Responsible production is the one in which the transformation of raw material into finished product is optimized, the waste generation is reduced, and the least amount of energy possible is used. This assertion prompts us to consider two basic concepts simultaneously: Cleaner Production (CP) and Energy Efficiency (EE).

Responsible production is directly associated with cleaner production (CP). Within the territory of the Argentine Republic there is an unquestionable and widespread belief among small and medium-sized enterprises (Pymes, in spanish) that environmental protection measures are expensive and that their application makes companies lose competitiveness. This leads to a lack of interest and investment of resources in pursuit of sustainable development in the industrial sector of the country. However, there are plenty of studies that proper management of raw materials and energy translates directly into a decrease in production costs, and indirectly into an improvement in the quality of life of the employees of these companies and, as last and no less important consequence, a decrease in the environmental impact (4, 25, 27). Therefore, the resolution of many conflicts between the industry and the environment must be approached with a cost-effective

management, preventing the contamination generated by the non-transformation of raw materials into products and the waste of energy in inefficient processes.

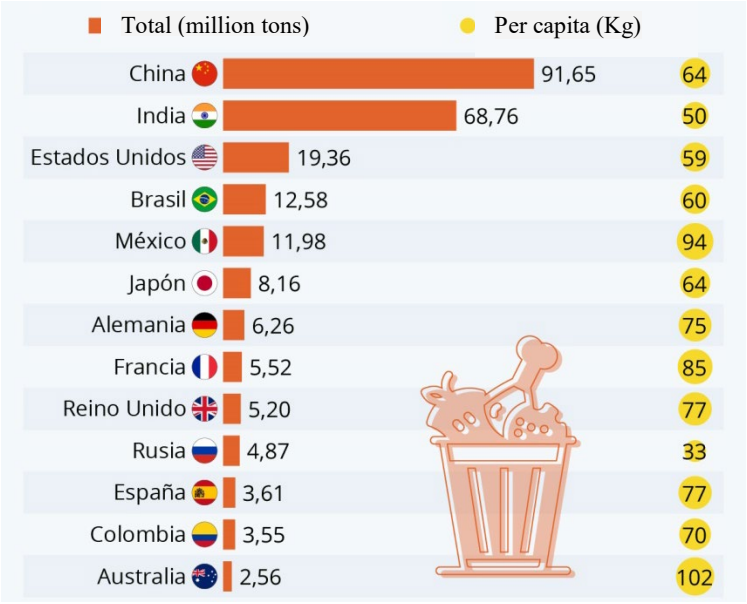
The reduction in pollution that we can achieve in production processes is what is called cleaner production (CP), being a work methodology that allows us to reduce the consumption of raw materials and energy, reduces effluent treatment costs and Above all, take care of the environment where it develops. Its application is carried out in companies that produce food, metal-mechanics, textiles, fruit and vegetables, restaurants, etc. The main items that are worked on are: rational use of water and energy, proper waste management, good production practices, maintenance, etc.

In this context, the Environmental Management and Incorporation of Cleaner Technologies for SMEs Project was created in Argentina, with financing from the Inter-American Development Bank (IDB) and through the Libertad Foundation, located in Rosario, Santa Fe province. The guides of cleaner production in SMEs offer guidance on reducing environmental impacts in this type of company.

Responsible production is actually a necessary but not sufficient condition in order to achieve the essence of SDG 12. According to the 2021 Food Waste Index, published by the United Nations Environment Program (UNEP), 931 million tons of food are wasted in the world each year (17% of the total food available to consumers).), of which 569 million come from households. The remaining amount is attributed to restaurants and other food services (244 million tons) and retail trade (118 million tons). Globally, per capita, 121 kilograms of food are wasted at the consumer level each year, and 74 kilograms of those are wasted in households. This enormous waste is produced by different circumstances: distribution and logistics problems, lack of capacity to maintain the cold chain, inaccessibility of some populations depending

on the climatic condition, lack of knowledge of the population to keep food in good condition until its consumption, etc.

Graph 1. Estimate of the annual volume of food wasted in households of countries selected for this study.



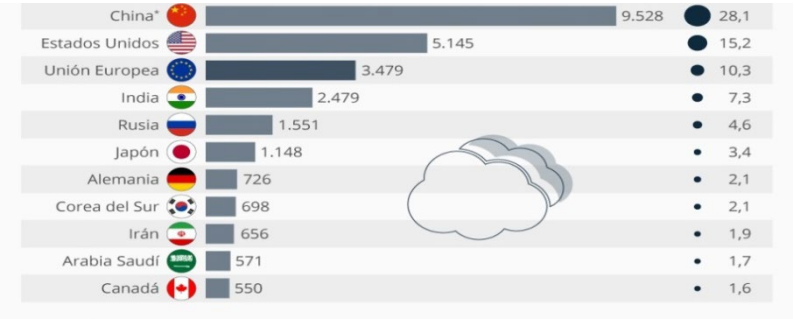
Source: food waste index 2021 – UNEP.

Unfortunately, since long time ago, we live in a society that seeks to fulfill all of its life expectations in the consumption of tangible and intangible goods. But that excessive consumption causes, among other issues:

- The generation of different kinds of waste in growing quantities, whose final destination in almost all cases leads to increase environmental problems derived from its inappropriate accumulation.
- The loss of big food quantities without its proper utilization.
- The elimination of forests, vegetation, rainforests, etc., in order to create suitable lands for crops that satisfy society's food requirements, which could be avoided if food was better distributed and if all products were used entirely.

- The precious metals mining with no practical value, just for financial speculation, that causes highly harmful changes to the landscape and the surroundings where multiple societies with subsistence economies develop their activities.
- The loss of CO_2 retention due to the elimination of trees so as to satisfy the excessive comfort demands of our society.
- The pollution of surface and groundwater because of the aforementioned activities.
- The loss of enormous amounts of water, required for subsistence agriculture and needed by whole populations.
- The pollution of soils with hazardous substances and the creation of environmental liabilities of which no one is held accountable.
- The air pollution caused by the use of non-renewable fossil fuels that produce Greenhouse Gases (GHG), particulate matter, etc., coming from sources such as terrestrial and aerial vehicles, industrial chimneys and solid urban waste dumps, among others.

Graph 2. Countries and regions with the highest volume of CO2 emissions in 2018 (millions of tons).



Source: BP Statistical Review of World Energy 2019.

Both in production and consumption of goods and services, continental and regional differences are remarkable, due to the development level of their inhabitants, their culture, their customs, their

technological development, etc. Therefore, when the global situation on this matter is analyzed, there is a risk of generalizing completely dissimilar realities. That is why, in accordance with the axes of this book, and without ignoring that Latin American countries have very different realities, we will specifically restrict the analysis to a higher education institution, the University of Centro Educativo Latinoamericano (UCEL), located in Pellegrini Av. 1332, Rosario (Republic of Argentina), which is inserted into the Latin-American reality in RCP. Thus, section 1 shows how this University concretely works for the compliance of SDGs in general, what is the current situation, what are present and future plans in connection with them and to what extent, aiming to achieve them, UCEL fulfills its mission and institutional vision, for which it was created in 1992.

Thereupon, section 2, which is the core of this chapter, shows how UCEL effectively contributes to the compliance of SDG 12, always bearing in mind the axiom: think globally and act locally. Taking into account that the axis of this book is the link between higher education institutions, ethics and SDGs, it describes how and how deeply UCEL is actively involved so that this goal can be brought into practice in order to achieve a proper knowledge transfer in the regional area. In this respect, UCEL promotes responsible production through its Pilot Plant of Vegetable Oils and by means of research projects aimed at generating high protein value foods, using regional raw material and with low-cost production. This University also intends to raise awareness on responsible consumption through multiple strategies: a postgraduate degree, "Environmental Management Specialization" (EGA in Spanish), and concrete actions executed by the author of this chapter within the framework of the University's environmental activities, in relation to air, soil and water contamination problems.

Finally, some brief conclusions and reference bibliography are included.

University of Centro Educativo Latinoamericano (UCEL) and Sustainable Development Goals (SDGs)

Political and economic context

In a context of constant changes in economic growth policies and monetary instability due to the constant and growing inflation in the country, companies and universities are immersed in the challenge of developing even in the presence of a political, economic and social crisis, aggravated by the effects of the COVID-19 pandemic). In July 2022, the situation reached a breaking point that worsened with the resignation of Economy Minister Martín Guzmán, a decision criticized by the coalition itself. As a consequence, a currency run was triggered that led to the outbreak of protests in various parts of the country on July 9 (Argentina's Independence Day) and in the subsequent resignation of the Minister of Economy Silvina Batakis after 24 days of office. The position was occupied until then by the president of the Chamber of Deputies, Sergio Massa. In this framework, Argentina had three Ministers of Economy in only one month of monetary exercise. Later, political analysts, journalists and members of political parties such as Together for Change accused the government of an internal conflict generated by a sector close to Vice President Cristina Fernández de Kirchner, which triggered a series of political conflicts between the ruling party and the opposition, which continue to destabilize and obscure the possibility of establishing solid and long-term economic development policies throughout the national territory.

There is a consensus that universities should leave academia to take on the problems of the regions in which they are inserted for the purpose of, at least, proposing alternatives to solve the most pressing problems of society in general and of the most vulnerable population in particular, always from the perspective of Sustainable Development (SD). This positioning of the universities must be able to be translated into concrete

facts: research, academic offer, services to the community, extension courses, etc.

The University of the Latin American Educational Center

The University of the Latin American Educational Center is a private, non-profit university based in Rosario, Argentina. Established in 1993, it was the first Methodist Church University in Argentina and the first private degree-granting university in this city. Its origin dates back to the arrival of two missionary teachers sent from the United States by the Methodist Episcopal Church to open a primary school for girls, the North American College, in 1875, under the patronage of President Domingo Faustino Sarmiento. Secondary schools and high schools were later added, and in the 1950s the College became coeducational.

UCEL belongs to the International Association of Methodist Schools, Colleges and Universities (IAMSCU). He is also connected with the General Board of Higher Education and Ministry of the United Methodist Church in Nashville, Tennessee, USA.

In this context and with the growing development and expansion over time, UCEL has been created and carries out a solid scientific and technological training of professionals to contribute to the economic, social and cultural development of the region. This could be done with an understanding of the modern world and an ethical commitment, which would in turn allow both its students and teachers and researchers to assume their civic and professional responsibilities, with a sense of ethical commitment to others and the environment.

In addition to the various diplomas for specialists in the fields in which UCEL develops, the careers that it currently presents are those that are presented below. Within the Faculty of Law, the following: University Faculty, Public Auctioneer and Real Estate Broker, Notary Public and Bachelor's Degree in Administration and Commercialization of Real Estate.

The Faculty of Chemistry presents the following degree courses: Bachelor's Degree in Nutrition, Engineering in Food Technology and Engineering in Information Systems, and University Analyst in Information Systems. This faculty includes the following Postgraduate courses: Specialization in Maternal and Child Nutrition and Specialization in Environmental Management.

For the Faculty of Cs. Economic and Business: Public Accountant, Bachelor's Degree in Business Administration, Labor Relations, Marketing, Economics, Hotel Administration and Tourism Business Administration, Within the Postgraduate, there is a Master's Degree in Labor Relations and Human Resources, and Specializations in Taxation, Accounting Expertise and Applied Economics. The Wesley Institute teaches a degree in Theology in the distance modality and a series of courses on theological issues and training for pastors of Protestant churches.

UCEL ethical and educational policies

Within its academic statute, this university plans, mainly, the following purposes:

a. Comprehensive training of teachers and students within the Christian tradition and the highest universal values, through the dissemination of culture and knowledge that guarantee their insertion in the community, and will be committed to the democratic and republican system of life.

b. Promotion of a university environment that tends to the search for truth, knowledge and excellence, through integrating approaches, based on diversity and pluralism.

c. Balance between traditions and innovations and between the development of the mind, body and spirit.

d. Integral academic, humanistic and scientific training in the different professions, through the Academic Units that compose it,

through undergraduate and postgraduate courses, and extension, research and transfer activities.

e. Investigation of the widest spectrum of possibilities, prioritizing issues related to its educational offer and the needs that are manifested within the community.

f. Cultural, scientific and technological projection at the service of the interests of the region, the Nation and humanity.

In addition, the University Statute expressly excludes any profit motive. Any surplus that may exist in any exercise of the Institution, will be destined to solve obligations and to improve the academic activity, and cannot be distributed in any way among the members of UCEL, nor to give them a destination other than that of their object.

Regarding the structure of the authorities of this institution, the general management is in charge of a Superior Council, which will be made up of the following members: Chancellor, Representative member of the Board of Directors of AUCEL, General Vice Chancellor, Academic Vice Chancellor, Vice Chancellor Financial Economics, Chaplain, Deans and Teaching Representatives (one per faculty).

Together with the Superior Council, the Board of Directors of the Association of the University of the Latin American Educational Center (AUCEL) is developed, which delegates to the Rector the legal representation of UCEL and is supportive and responsible together with him and the Superior Council, before the competent authority, compliance with current legal regulations, as well as those established in the Academic Statute.

UCEL proposals for compliance with the SDGs

Thanks to the resources they have, to a greater or lesser extent, universities in general have a lot to contribute in relation to the fulfillment of the Sustainable Development Goals; Furthermore, we can say that they play a central role in this sense, since they are one of the

bases that countries have to generate, manage, transfer and apply new knowledge that allows them to successfully face the fulfillment of the SDGs.

Particularly in Latin America, where Argentina is located, we must review our development model, how we manage our resources and how we supply useful products to society. This must be realized without generating polluting waste and, if it occurs, by acting to reduce or eliminate its negative impact on our environment. In an ideal world this may be even done, increasing our efficiency in the use of energy and eliminating the use of those expendable devices or objects.

For this reason, the actions that UCEL carries out to fulfill the SDGs in the scope of its sphere of action will now be detailed:

- *No Poverty*

In current and future society knowledge, the best way to fight poverty is educating to the highest level possible the population interested in acceding to higher education. Accordingly, UCEL offers an education of excellence within the framework of Christian values.

- *Zero Hunger*

Besides the degrees related to food production and the study of food nutritional qualities, offered by UCEL since its beginnings, current research projects aim to achieve high nutritional value foods at a low cost, especially for the population with fewer resources. Research has a regional sense, by using raw materials available in the environment to avoid long distances and consequent emissions of GHG.

- *Good Health and Well-being*

Broadly speaking, health has a place in UCEL: degrees, courses, certifications, applied research, etc. Well-being is present in the degrees that tend to the care of material goods and the protection of public and

private rights. Sport activities for the students, first aid courses courses and the commitment of its members to collaborate with the health care of people from at-risk communities, away from urban centers, tend to achieve this SDG.

- *Quality Education*

Academic excellence is UCEL's main objective since its origins. The improvement in the teacher staff training, the updating of study plans and the creation of new degrees and courses have been the primary aim for UCEL's educational community since 1992. The goal is the improvement of the quality of the offered degrees and of the experimentation levels, the increase of the bibliographic collection and the permanent training of the staff to achieve academic excellence.

- *Gender Equality*

In UCEL, the attention to gender policies in general and gender equality in particular has been constant since its creation. Regarding the University staff, there is a remarkable predominance of the female gender in the teaching and non-teaching staff, as well as in the student body. Furthermore, gender equality is verified in research groups, extension and teaching. The selecting process of the staff in distinct areas has this concept as a priority, and it is considered natural and not an imposition.

- *Clean Water and Sanitation*

Within the University, where around two thousand people per day perform their activities in normal times, drinking water is monitored in the institution's physical-chemical and microbiological laboratory, currently in certification process. Specialized personnel are in charge of sanitation in the different educational spaces throughout the day. The use of sanitizers, cleaning equipment and the monitoring of common

areas allow to ensure absolute sanitation conditions for everyone in UCEL.

- *Affordable and Clean Energy*

Excessively spent energy is a polluting factor due to its fossil fuel-based generation. Reducing consumption is a way of reducing contamination. Since most of the energy is used for lighting, incandescent lights have been replaced by low-consumption lights, with a significant reduction in energy consumption. In the Pilot Plant of Vegetable Oils, solar panels will be installed to provide energy to the laboratory and services area.

- *Decent Work and Economic Growth*

UCEL's whole staff conducts its activities within the framework of legal standards, in compliance with Hygiene and Safety Work directives. The working conditions of the staff are characterized for being decent and appropriate. Its economic growth is directly linked to its degree of dedication and commitment. The institution is non-profit and reverts its surplus into infrastructure improvement as well as services for its staff and community.

- *Industry, Innovation and Infrastructure*

UCEL owns a Pilot Plant of Vegetable Oils that is unique in South America because of its performance level, its emphasis on innovation and the quality improvement of the processes developed there. Designed to provide services for industries of the largest oil-production center in the world, it also allows training for students and teachers, and the creation of new products based on processes wastes through applied research projects with a regional focus. The Plant characteristics and processes will be described in section 2.1.

- *Reduced Inequalities*

Using different strategies (e.g. extension tasks), UCEL strives to fight the environment's social inequality contributing with knowledge and culture. The aim is to level life conditions of the local and regional community. Applied knowledge allows to broaden the views of the University's recipients and a change in their worldview with very positive results.

- *Sustainable Cities and Communities*

UCEL promotes a more sustainable city with significant contributions to the reduction of waste generation, waste classification at source and the possibility of sorting the wastes to recycle them. Also, innovation in productive processes, improvements regarding the optimization in managing different kinds of enterprises, the defense of consumer rights and personal rights, and improvements in the finances of SMEs, among other actions, contribute to a significant improvement of the city's sustainability. This is one of UCEL's goals, not only at its headquarters but also at its different branches in the region.

- *Responsible Consumption and Production*

Goods and services production must be destined to their rational use and to avoid superfluous products and wastage. Satisfying social needs implies having a clear understanding of what is important and what is accessory. One of the major environmental problems studied at the "Environmental Management Specialization" (EGA), a postgraduate degree in UCEL (view section 4.2.1), consists precisely in analyzing what are the basic requirements of current societies in order to avoid consumerism, which causes a waste of material and energetic resources. This sobriety culture is found in the whole of UCEL's academic offer because of its ethical and economic importance.

- *Climate Action*

GHG emissions have generated a rise in the planet's average temperature with unpredictable consequences. UCEL was the first university in the country to measure its Carbon Footprint in 2018, aiming at reducing it from year to year. For this purpose, all activities of the headquarters were taken into account, as well as its employees' means of transport and the energy consumption of air conditioners, heating equipment, computer system, etc.

- *Life Below Water*

Due to its location, UCEL contributes to upgrade the quality of the city's waterway, the Paraná River. Every year, different teams clean up plastic waste thrown into the river, picking up a ton of trash per working day. As it is well known, plastic micro particles have been found inside the digestive system of the Paraná fish. This is caused by people's negligence, because they throw away plastic bottles instead of reusing them or throwing them in authorized places. It is clear that this plastic follows the trophic chain and ends up in the human body by fish intake; that is precisely what UCEL tries to avoid.

- *Life on Land*

Life on the land in which the University is located is permanently monitored, preventing soil contamination in its Pilot Plant and in every place where UCEL's educational community performs their activities. UCEL conducts environmental assessment studies in the Plant in order to verify that the activities do not deteriorate the water, air and soil quality. UCEL's effluent plant guarantees that the agricultural-industrial environment where it is located is not polluted.

- *Peace, Justice and Strong Institutions*

Peace and justice are also evaluated in the human relationships of UCEL's employees by the Departments of Human Resources and Student Welfare. Congenial work environment, conflict resolution via mediation and the presence of a university pastoral contribute to achieve this goal. The institution's strength is observed in the increase of the educational offer, in its significant presence in society and in the development of applied research with a regional focus.

- *Partnerships for the Goals*

The current complexity of higher education has led UCEL to make alliances with similar institutions in university networks that enable to join efforts and enhance institutional synergy. One of these networks is Argentinian Universities for Environmental Management and Social Inclusion Network (UAGAIS in Spanish), which allows to boost sustainable management in Argentinian universities, provide tools for its evaluation and communicate the best practices regarding university sustainability.

UCEL's Actions to Achieve SDG 12: Responsible Consumption and Production

Responsible production

UCEL, through its Food Technology Engineering degree (ITA in Spanish), has always worked on quality improvement of food production processes, on the optimization of these processes' productivity, on the rational use of energy and on the care of the environment surrounding the production plant. That is to say, UCEL has worked on CP and EE since its beginnings. These concepts, essential in the training of the Faculty of Chemistry students, enable graduates to have specific training regarding environmental care in general, beside specific engineering training.

For ITA students to have an appropriate and technologically equiped place for their practices, UCEL built a Pilot Plant of Vegetable Oils where CP, EE and environmental care could be applied in the production of edible vegetable oils. The Plant characteristics and the products are described below.

The UCEL-ASAGA Pilot Plant of Vegetable Oils is located in National Route 9, 335.5km near San Jerónimo Sud, in the province of Santa Fe. It is a joint undertaking between UCEL and the Argentinian Association of Fats and Oils (ASAGA in Spanish) for research, training and development in the industrial production of fats and oils of vegetable origin.

The Plant, inaugurated in September 2016, is focused on the extraction of oils and fats of vegetable origin. Extractive processes and further processing of the obtained flours for its use for food purposes, both for human beings and animals, are studied. Moreover, just like flours, extracted oils and fats can be subjected to special processes, such as refining, with the objective of adding value and broadening their possible uses for food and industrial purposes.

Located in the world's most important oil-production and oil-processing core, the Plant is set in an agro-export model country, in which active policies must tend to favor a diversified and federal development with value added and product use in its place of origin, and to counteract long decades depending on the exportation of low or non-value-added raw materials. In this context, science and technology agencies, universities, the National Institute of Agricultural Technology (INTA in Spanish), the National Institute of Industrial Technology (INTI in Spanish), ASAGA, all have a strategic role in the regional scientific and technological development and in the training of skilled human resources. The Plant industrial characteristics make it unique not only because of its automation and technology level, but also because of

the associative conception of its development, that is to say, due to its double-sided nature: university and entrepreneurial. In this regard, in order to build this Plant, UCEL and ASAGA collaborated in academic, technical and scientific assessment. The fusion of two high-level institutions such as UCEL and ASAGA materializes the performance of competitive research and development activities on the basis of laboratory tests and at pilot plant scale. There is also an effort to involve regional and provincial governments so they see the Plant as a reference point for the improvement of agro-food industrial processes.

This Plant seeks to be the starting point for strengthening the knowledge of the future UCEL graduates. It is focused on the academic training of specialists and on developing technological innovations available for their implementation in all enterprise groups belonging to the sector of fats, oils and derived products with industrial and/or food use. It allows to enrich and enhance Research and Development (I+D in Spanish) entrepreneurships as well as to promote the generation of new techniques that aim at improving methods and processes and reducing processing plants' production costs. It seeks to apply new technical and scientific knowledge, and also to introduce conceptual shifts in products, processes and/or organizational forms with a significant impact on the economy of oil-sector companies, e.g.: improving productivity, reducing costs, moving towards the opening of new markets, creating appropriation forms of the benefits of technological innovation, promoting environmental awareness related to the Plant effluents treatment, etc. Research and development activities allow the validation of new processes and prototype products that can be applied later at industrial scale, providing technical and economic benefits with great impact on regional industry. In the Plant, the procedures are similar to the ones developed in industries which elaborate edible fats and oils (15).

Regarding the definition, organization and execution of Research, Development and innovation (I+D+I, in Spanish) complementary lines,

the activities in the Pilot Plant have a positive impact on the productive sector, an impact that will be seen in the medium and long term and that has a huge potential in terms of value addition. The Plant works to identify I+D+I lines to achieve innovation in products and processes, and to establish and develop priority lines.

In addition, the Plant has been built with extremely high safety ratings, it satisfies the most demanding environmental requirements and it holds technologies to reduce energy consumption to the minimum possible (4).



Picture 1: Panoramic view of the UCEL-ASAGA Pilot Plant of Vegetable Oils



Picture 2: Panoramic view of the UCEL-ASAGA Pilot Plant of Vegetable Oils (detail)

Pilot Plant's operation

Preparation Sector

The goal of this sector is to produce the seed physical transformation in order to prepare it for the solvent extraction process (hexane).

The seed is unloaded from a truck into a reception silo of about 6 tons of capacity. Via transport, the seed is sent to a first cleaning stage. This stage aims to remove remnants of solids and impurities present in the seeds by using a sieve. In turn, there is a magnet system that retains or prevents the passage of solid metal particles that may damage the subsequent equipments' performance, mainly breaking and laminating machines. Impurities are gathered in an appropriate cart. The cleaned material is then sent to a hopper-scale that allows to calculate the volume of processed seed.

The next stage involves size reduction through a breaking machine, which produce greater surface contact in the seed for further operations and detaches the shell, making its removal easier. The broken seed together with the shell is then transported to the cooking stage. On the way, if eliminating the shells is wanted (as these have a lower specific

weight), they can be dragged down through a vacuum using a fan-generated air stream, after passing through a cyclone which divides two streams: upper stream: an air stream with 20% of relative humidity (eliminated to the atmosphere) and lower stream: solid shells and impurities.



Picture 3. Sector and entrance sign to the plant.

With the use of a cooker, the cooking stage allows conditioning through the application of heat and rising material temperature up to 60º C. This procedure is carried out by the indirect application of high-pressure water steam (7-8 barg). This heating denatures the proteins that form cellular walls retaining the oil and diminishing oil viscosity due to temperature effect.

The following stage, lamination, allows to break oil-bearing cells, whose effect enhances oil exposition for ulterior extraction. These sheets must have a thickness of about 0.28 y 0.4 mm, depending on the material being processed.

Using an expander, the previously formed sheets are expanded to create a more permeable material with a certain porosity that enhances the subsequent extractive process. In order to achieve this, direct high-

pressure steam is injected, which in turn provides certain humidity. Within the equipment, temperature varies between 105-108º C.

In order to store the material at a suitable temperature, a cooler machine, which allows material cooling through a cross-air stream, is used.

If processing high oil content seeds is wanted, the process may be different after lamination and breaking. An extrusor can be used to condition, raise the temperature and prepare the material for pressing by applying pressure.

This extruded material goes into a press. As pressure increases, the product releases heat; on one side, it secretes oil and, on the other side, the filter cake is detached. This heating, in addition to the exerted pressure, not only diminishes oil viscosity, allowing more fluidity, but also eliminates water, drying the product. This pressed material must be cooled down using a cooler machine.

Air streams with a high relative humidity content (60-70%), then eliminated to the atmosphere, are vacuumed by a fan, after passing through a cyclone.



Picture 4. Sector of silos for seed collection.

Extraction Sector

The goal of this sector is to reduce the content of oil within the sheet, expanded or expeller to the minimum possible with the minimum hexane consumption.

The specially-treated material coming from the preparation goes into an extractor. This equipment, central in the process, provides enough contact time between the material and hexane in order to extract the oil. Hexane, before being put into the extractor, is preheated with an exchanger.

Basically, there are different stages in this operation:

1) soaking: the material is soaked in the liquid so it enters the washing stages impregnated with hexane or miscella, because:
   - soaked material has a lower density than wet material, in the latter case the extractor's capacity would be misused;
   - the material gets greater homogeneity, which improves the extracting process. Being impregnated with hexane or miscella, the formation of preferential circulation flow channels is avoided;
   - it diminishes air intake within the system, which improves the recovery process and reduces hexane loss with steams;
2) washing: hexane and miscella (irrigations) circulate through the material to perform the extraction strictly speaking;
3) draining: hexane from the last wash is left to drain so that flour has the least amount of hexane possible.

Miscella (oil + hexane) passes through a fabric to get filtered before leaving the extractor and getting directed to the distillation stage. A hydrocyclone allows to separate and recirculate into the extractor solid particles that might get dragged together with miscella and would obstruct the distillation equipment.

On the other hand, solid material is unloaded into a hopper and directed to the desolventizing stage. This extracted material is soaked in

hexane and transported into a desolventizing-toasting machine**.** Inside this equipment, a first pre-desolventizing is conducted by means of flour heating, in which hexane gets eliminated using indirect heating and a direct steam injection as a conveying element. 99% of the hexane elimination is done in a relatively easy way and in a short time; the remaining 1% presents difficulties. The injected steam homogeneously produces the desorption effect of hexane in the flours. The purpose of this pre-desolventizing is to achieve an adequate humidity level in the flour for a proper toasting. The direct steam, together with the eliminated hexane, is directed to the atmospheric condensation stage.

The desolventized flour (about 300 ppm of hexane) is unloaded by a rotary valve that keeps the material sealed. This flour is taken via transport into a hammer mill in order to reduce and homogenize its size, and then goes into a strainer, after being transported into a storage silo.

Distillation

Oil leaves the extractor with the solvent (approximate oil concentration: 25% p/p), which must get separated. This separation, via evaporation, is done in the distillation.

Miscella is then taken into a buffer tank and from there, after passing through a filter bag to retain solid waste, is pumped out into an evaporator, subjected to an absolute vacuum of 300 Torr and indirectly heated with a saturated water steam of 4 barg. On this stage, most of the hexane from the miscella is eliminated. Evaporated hexane is directed to the vacuum condensation stage, while miscella is pumped out to a stripper in order to eliminate the rest of the hexane and increase its oil concentration. This column has internal trays where the fluid circulates, and from the bottom of it direct drag steam is injected. This equipment, like the evaporator, is subjected to a vacuum of 300 Torr.

The evaporated hexane together with the stripping steam is sent to the vacuum condensation system, while the oil without hexane is led to the degumming stage.

A safety tank has a volume capable of restraining the distillation equipment, in case of a potential leakage or an accidental breakage of them.

Degumming – Drying

The oil coming from the stripper is in-line mixed with hot water in order to remove hydratable gums (phosphatides). The mixture becomes more efficient when circulating through a static mixer and then it is directed into two reactors to complete the required reaction time. After reaction, the oil together with the gums are sent to a centrifugal separator that separates the oil from the gums by centrifugal force. The gums are retrieved in an appropriate container while the degummed oil is led to a buffer tank. From this tank, the oil is vacuumed out into a dryer, which is subjected to an absolute vacuum of 80 Torr generated by an ejector. An oil sprinkling is generated inside this equipment, which allows to eliminate retained water after degumming and hexane traces dragged from previous stages. Entering the dryer and in order to achieve a proper elimination of this water, the oil is heated indirectly by a steam of 4 barg with a double-tube exchanger.

Before sending the finished oil into stock tanks, it must be cooled down indirectly by water up to 40º C to avoid its deterioration. To this end, a plate cooler is used.

Solvent Recovery (hexane)

The gas streams coming from the evaporator, the stripper and the ejector are sent to a condenser which allows, by indirect contact with water, to condense these hexane and water gases. Inside this equipment, there is an absolute pressure of 300 Torr generated with an ejector.

Condensed fluid is then sent into an hermetic tank, from which it is pumped out to a decanter.

On the other hand, the gases coming from the toaster and from the vents of all the atmospheric equipment is sent to the atmospheric condensation system that is comprised of a condensator and uses water in indirect contact to this end. The condensed stream is directed to a decanter. Because the streams that enter this decanter are basically composed of hexane and water, an adequate residence time allows to separate both fluids and get hexane in good conditions to be reused. The water that comes off from this equipment is directed to a boiler in order to extract the hexane, which is drawn by the water streams into the decanter. The ejector's motive steam enters this boiler, which allows to increase the mixture's temperature in order to evaporate the hexane. At the same time, it is provided with a direct steam line in case it is necessary to add energy to the mixture. This equipment's output water is sent into a solvent trap in order to keep and accumulate hexane. The trap's water output has a flow speed of about 300 kg/h and contents about 20-30 ppm of hexane, and it is an effluent liquid stream.

Regarding the mineral oil circuit, the rich-in-hexane non-condensable steams that come from the atmospheric condensation system are sent into an absorber, in which they are put in contact with mineral oil. As the gases go up the column, the hexane is absorbed by this oil, whose temperature must not exceed 32º C approximately. The drawn air and hexane traces that are eliminated by the column's dome are sent to a flame arrester before being vented to the atmosphere. The hexane concentration of this gaseous mixture is of about 25 g/m^3.

The mineral-hexane oil miscella that comes off from the absorber is heated with indirect steam in a heater, before entering the stripping column, in which direct steam is injected on the bottom and the mineral oil's hexane is eliminated for its reuse. The column operates in a 300 Torr vacuum and, as mentioned earlier, the gases in the dome of this

column are sent into a vacuum condenser while the oil is cooled down using a cooler in order to enter the absorber through the upper part and close the circuit.

Tank yard

In this yard there is a tank for the vegetable oil finished in the degumming-drying stage. The pipes connected to this tank allow the oil to be sent to future refinery or to be loaded in a truck. Another tank is available to receive dry, but not degummed, oil. The idea is to accumulate material in order to use the centrifuge properly, since this machine has spare capacity for the Plant's nominal operation flow. A third tank is used for lodging pure solvent.

Raw materials for the operational stage

The required raw materials used in the operational stage are: seed, flour, miscella, oil, gums, hexane and water.

Environmental Management Plan

UCEL's strong commitment to environmental care made it essential to study the Pilot Plant's activities' possible negative environmental impacts. For that purpose, an *Informe Ambiental de Cumplimiento* [Environmental Report of Compliance] (Coria, 2010) was prepared. This possible qualitative and quantitative impacts were studied by using the Leopold matrix (cause and effect). Values were agreed in an interdisciplinary way, identifying the critical points in order to enhance desirable effects as well as to mitigate the undesirable ones, and to establish a general plan and programs of protection and conservation of the Pilot Plant environment.

The criteria established at the moment of the matrix confection are maintained and upheld on equal terms, which implies that future improvements or modifications to the Plant can affect positively or

negatively the considered values. This would imply the revision of each program of the Environmental Management Plan.

The Environmental Management System (EMS) includes the Environmental Management Plan (EMP), which provides the foundations to establish the Environmental General Policy and Strategy of a Plant like this. Thus, environmental issues are made compatible with political, socio-economic-financial, technical, commercial, cultural and social decisions. The EMS application is limited to preventive approaches in order to evaluate in advance activities that could have negative environmental impacts, to foresee these impacts and how to eliminate them, and to strengthen positive impacts to the system and the Plant itself.

The goals of the EMP are to consider a series of guidelines and strategies intended to comply the environmental objectives preset by the Plant's authorities. These guidelines seek to ensure that the economic, financial and technical decisions are environmentally rational, effective and sustainable over time.

On the other hand, UCEL's Environmental Policy implies the application of an EMS which must be integrated to other University projects and must be able to manage in a proper and sustainable way the negative impacts this activity could potentially generate during its lifespan. The Plant complies the current provincial and national environmental legislation, and is prepared to comply international requirements as well.

The EMP is evaluated annually, and Monitoring Programs are designed to be performed every three years or less if necessary. The professionals in charge keep records of the values obtained and their tendencies is verified in order to generate statistical information.

With this Plant, included in UCEL's institutional strategic plan, the University clearly assumed a key role of high education institutions: achieve a significant transformation in the surrounding reality.

Nowadays, as stated above, it is fundamental for the University to go out of the Academy and share concerns, common goals, human and material resources together with social and institutional actors, in order to propose agreed and concrete solutions for regional problems that nobody can solve on their own or without the interdisciplinary approach required by the complexity of present times. Thus, this Plant enables the complementarity between the University and enterprises, in an attempt to develop solutions to actual environmental problems.

Responsible production implies not only environmental care, but also the application of the necessary technology to convert sub products into high nutritional value products. In Rosario there are many people below poverty line, and, therefore, they only have access to a poor and bad nutrition. After the construction of the Pilot Plant of Vegetable Oils, as a next step UCEL created the first Technological Platform of Vegetable Oils and Protein Extraction Valorization, together with the companies Bioceres S.A. and Arcor S.A.. The Platform's goals are:

- creating the necessary technical infrastructure at pilot scale in order to achieve an integral cycle of development and valorization of extraction proteins and vegetable oils, derivatives and sub products from native crops. This implies the installation of a plant for protein concentrates and isolates, texturizing, bio-refining, etc.

- developing new value-added products centered in the integral valorization of extraction proteins and oils, for export and/or import substitution, prioritizing technological innovations on agro-food, bio-energy and biotechnology of the waste and sub products generated in the process;

- offering high technology services to meet the demands of the National Innovation System as well as agro-food and agro-industrial companies interested in the economic valorization of extraction proteins and oils, derivatives and sub products;

- formalizing strategic I+D partnerships with actors from the scientific-technological system and the food production sector in economic valorization projects regarding proteins, derivatives and sub products.

The first part of this project, which implies grain grinding and separating its components in oils, fibers and proteins, has already been carried out. The Pilot Plant of Vegetable Oils is at the integral service of the requirements of the National Innovation System and Argentina's agro-food and agro-industrial productive sector.

Responsible consumption

Although the ideal situation would be a change in the development model to reduce the problems regarding responsible consumption mentioned in the introduction, until this goal can be achieved, higher education institutions must work responsibly and vigorously in the solution or mitigation of the harmful effects caused by current processes. To this effect, a previous, in-depth analysis is required in order to get a clear vision of our conducts and how we jeopardize future generations, infringing upon the very concept of SD.

UCEL has different strategies to promote responsible consumption. In this respect, we will first describe the aforementioned "Environmental Management Specialization" (EGA), a postgraduate degree dedicated to provide environmental care training and skills to propose solutions to environmental problems, and then other UCEL concrete actions related to air, soil and groundwater contamination and directed by the author of this chapter.

Environmental Management Specialization (EGA)

UCEL's academic offer shows excellence in all of its graduate and postgraduate degrees, providing the students the skills they need to make a balanced synthesis between the best practices and the theories sustaining them in their professional performance once graduated. This

is UCEL's premise at the moment of planning and materializing its educational offering for future professionals, which play a central role in the region's sustained growth and development.

Rosario, center of the influence area of UCEL, is by tradition an important industrial and commercial region, and it is part of the country's most important productive corridor, which stretches from the city of La Plata, in the province of Buenos Aires, to Puerto San Martín, in the province of Santa Fe (a few kilometers away from Rosario). The city represents the central core of an urban conglomerate known as Metropolitan Area of Gran Rosario, with an approximate area of 580 km^2 and with a population estimated at 1,070,000 inhabitants. This area gathers 42% of the industries, 53% of the employees and 62% of the production of the province. In this way, it is an industrial, commercial and financial center settled in the very heart of the country's most important agricultural and livestock productive region, known as Pampa Húmeda. In turn, the province of Santa Fe is one of the most prosperous regions in the country; its geographic location, its natural environment and its harbors can be pointed out as factors that have always favored its development.

The region's characteristics, added to the last decades' technological development, have generated serious environmental deterioration problems. With the "Environmental Management Specialization" (EGA), a year-long postgraduate degree, UCEL intends to contribute on solving the country's environmental problems in its legal, institutional and economic contexts, bearing the social responsibility it has with the region and the country, and contributing to high level professional training in environmental sciences.

This degree was created to fulfill an unsatisfied educational demand of professionals who work in production or services companies or audit offices, and the ones who are in charge of developing and implementing

environmental assessment studies and environmental management systems or plans. It also allows to offer a professional specialization in cross-sectional studies related to environmental management, a field of study in increasing development. Besides, it intends to satisfy the specialization demand regarding the resolution of the region's different environmental problems by training professionals who will be able to work in public organizations, as well as in industries, academic institutions or social organizations.

EGA first started in 2013 and was accredited by the National Commission for University Evaluation and Accreditation (CONEAU in Spanish, a decentralized institution that operates under the jurisdiction of the National Ministry of Education). EGA's main objective is to give an academic and professional training that provides conceptual and methodological competences and skills for the management of environmental resources, based on the analysis and understanding of the political, social, economic, administrative, legal, organizational and instrumental aspects required for the application and evaluation of environmental policies. This objective is focused on the needs of the region, its particularities and the aspects related to the urban environment of major cities and to the rural environment.

The specific objectives of EGA are: a) training specialists with a clear conscience about the importance of natural resource management, the dynamics of the relations between the State, society and nature, as well as the context in which they develop and the processes involved; b) providing knowledge and competences for the conceptualization and the empirical analysis of the organizational dynamics and the process of the environmental management system formation; c) developing skills regarding the use of the most technologically advanced tools applicable to environmental management; d) developing competences in different environmental management methods and techniques; e) relating environmental policies to SD policies; and f) developing activities that

promote the students' analytical, critical and creative skills and collaborative work in multidisciplinary teams.

Generally, students are professionals graduated from different five-year university degrees, who work in companies or public organizations related to environmental problems.

Regarding the degree's teachers staff, in UCEL there are local, national and international prestigious teachers, professionals and academics, with an extensive and renowned career in environmental management. Its Director is the author of this chapter since its creation. An Academic Committee is in charge of the students' supervision.

The graduates of EGA are able to: a) identify, evaluate and analyze activities aimed at preservation, correction and remediation of problematic environmental situations; b) suggest and implement solutions to detected environmental problems; c) design environmental management programs that achieve an optimal use of natural resources; and d) perform environmental assessment studies.

The degree is divided into eleven modules; the approval of all of them is a mandatory requirement to submit the Thesis. The modules have horizontally and vertically articulated thematic axes. The transversal axis is the application of management processes to solve environmental problems generated in productive or services enterprises, or problems that must be addressed by public organizations. These modules are: Ecology, Sustainable Development, Environmental Chemistry, Environmental Management, Environmental Legislation, Environmental Assessment Study and Evaluation, Environmental Policy and Regulation, Effluent Management, Energy and Environment, Industrial, Urban and Hazardous Materials, and Statistics. The Thesis is a real research work, monitored by the teacher in charge; the future graduate must demonstrate his/her ability to address problematic situations rigorously and independently. The final evaluation involves

case resolutions where the acquired knowledge must be integrated.

Air pollution

Globally, air pollution is one of the most critical environmental problems and one of the most challenging for the scientific community, which must face the problem of reducing it to permitted levels according to international laws on air quality. The best way to keep the air we breath uncontaminated is avoiding the emission of pollutant substances from their primary sources, that is to say, from the place in which they are generated. For this purpose, the best solution is the use of catalysts that retain these substances and degrade them to prevent them from escaping and contaminating the air and the environment. The author of this chapter has investigated the properties of different substances that may be used as catalysts for more than twenty years, in his doctoral thesis as well as in different research and technology transfer projects, which he has directed. Two of these projects, developed with UCEL's financial support, are mentioned hereunder.

Research Project: Study of the variation of the surface properties at high temperatures in transition metal oxides, supported in alumina, for its use in catalytic reactions which involve gases adsorption

Catalysts have a wide industrial use. The relatively low cost of the oxides, their high thermal stability and their possibility of reutilization by means of desorption with air at high temperatures make these materials of industrial interest in reactions at high temperatures, in which the catalyst efficiency, lifetime and versatility must be increased.

At present, there is very little information about the behavior of surfaces like transition metal oxides of the first period when they are subjected to temperatures between 600º C and 1000º C, temperatures which are used in industries, and when they are expected to be used as catalysts in reactions of industrial interest. The idea of using metal

oxides like Vanadium (V), Chromium (Cr), Manganese (Mn), Iron (Fe), Nickel (Ni), Cobalt (Co) and Molybdenum (Mo) is based on their thermal resistance, due to the fact that they are subjected to the temperatures that are normally used in industries, and on their different properties in acid-base and surface redox reactions, besides the possible synergies between them. Mo, although it belongs to the second transition period, was included to obtain comparative results in relation to the rest of the metal oxides, which belong to the first period.

The main objective of the project was to determine the influence of high temperatures over the surface activity of supported transition metal oxides. The specific objectives were:

- Determine the variations in the surface area of the different supported oxides (Isotherm BET).
- Analyze how temperature affects the crystalline structure of the analyzed oxides (XRD).
- Verify variations in the metal-oxygen bond energy for the supported oxides subjected to different temperatures (XPS).

After the bibliographical search, the team began the laboratory tasks in October and November 2007. In these months, the salts corresponding to the different transition metals were weighed and calcined in order to obtain the oxides, and the g-alumina was calcined always at 600º C. The oxides which were obtained, supported in alumina, were sent for laboratory analysis.

The gas adsorption capacity by the surface of metal oxides depends on the strength of different types of basic centers and of the number of them on the surface. This gas adsorption capacity is function of the temperature, of the type of gas circulating and of the flow as well. In order to determine this capacity, these solids are prepared and then characterized before and after their use at different temperatures to evaluate the surface variations provoked by the exposition at high

temperatures and different periods of time. This allows obtaining the best use conditions for each oxide in catalytic reactions which involve gases adsorption as a previous stage. The characterization implies the determination of BET Surface, X Ray Diffraction (XRD), chemical analysis to determine the quantity of metal on the surface (Atomic Absorption Spectroscopy, AAS) and X Ray Photoelectron Spectroscopy (XPS).

X Ray Diffraction consists in the study of crystalline structures, whereas BET Surface analysis is the measuring of the each oxide specific surface. X Ray Photoelectron Spectroscopy (XPS), on the other hand, consists in applying X radiation on the sample. This radiation is transferred to the internal electrons of the atoms present as kinetic energy. When the electrons are emitted, this kinetic energy is measured by the equipment; this action allows to know the different classes of atoms in the sample (qualitative analysis). The area under the curve in the process of deconvolution of the peaks obtained in the spectrum provides the quantitative relationship between the different classes of atoms on the surface.

In regard to the characterization of supported oxides, it was observed that the specific surface of chromium oxide is significantly reduced when the temperature and the period of time of exposition to it is increased. It was not possible to confirm if this behavior is shared by the other oxides due to technical problems of the equipment for determination of BET Surface and pore size distribution (*Quantachrome Autosorb Automated Gas Sorption*).

The analysis by AAS of the prepared oxides showed that the percentage of metal obtained in the oxide was inside the expected value (around 10 %). The analysis by XRD showed that as the treatment temperature increases, the crystallinity percentage for all the oxides also increases.

The XPS analysis showed that the bond energy for the oxide O1s increases as treatment temperature increases (531 eV at 600º C and 537 eV at 900º C). Something similar occurred with the Cr2p (577eV at 600º C and 583 eV at 900º C). This demonstrated that it is possible that there are two species, Cr_2O_3 and CrO_3, in different proportions while temperature increases, which could be due to an oxidation of the chromium from +3 to +6 in surface. This could explain the difference in XRD of the chromium oxide at 600º C with the one at 700º C and 900º C, attributable to the presence of more than one oxide at higher temperatures.

It was concluded that the transition metal oxides supported in alumina decrease their capacity to retain gases as temperature increases between 600º C and 900º C and as the treatment time increases, due to the fact that their specific surface decreases. We also concluded that there is a reduction in the pore size by crystallization, which decreases the adsorption capacity of the oxides by physisorption.

Technological Transference Project: Installation of the catalyst Cr2O3/Al2O3 in industrial chimneys – Reduction of SOx and Nox in emissions

Among the gases responsible for air pollution, the SO_2 is the most emitted pollutant to the atmosphere. The industrial processes which most contribute to the presence of SOx compounds in the atmosphere are calcination of sulphur minerals, oil refining, H_2SO_4 production and coke production from coal.

Sulphur oxides are eliminated from the air when they are converted in sulphur acid and sulphates. With this form they end up settled on land and sea, by pluvial precipitation or deposited in form of sedimentary particles.

General methods for SO_2 level reduction in gases from industrial chimneys are divided in disposable, regenerative and dry processes. As

SO_2 is an acid gas, almost all purifying processes use a watery solution or slurry of an alkaline material. The disposable designs get rid of the sulphur by eliminating it in the form of some residual mud of calcium type. The product of regenerative processes is sulphur or sulphuric acid, and the alkaline solution is recircled. In dry purifying, the SO_2 is removed by putting it in contact with an absorbent solution; this process generates compounds of sulphite and sulphate type.

The objective of this project was to investigate the possibility of reducing the level of this pollutant by means of its adsorption on Cr_2O_3/Al_2O_3 and then its reduction with CH_4, which is collocated on a metallic support in the industrial chimneys transversal sections. Based on studies made in previous research projects, it was observed that this catalytic material is capable of retaining sulphur oxides on its surface, together with the oxidation of methane and its conversion to CO_2. This chromium oxide supported in alumina has a high mechanic resistance to temperatures, and as a consequence its surface porosity (the gases are retained or adsorbed on the surface) begins to modify by the action of this parameter after 700º C. Another relevant advantage is its high adsorption efficiency and its capacity for regeneration (it can regenerate up to three times without losing its efficiency).

In the first stage of the project, experiments were made at laboratory scale using analytical quantities of catalyst and gas mass. Afterwards, the tasks were made at pilot plant scale; the necessary quantities were extrapolated to experiment on the base of a metallic column called "reaction site". This was designed at scale of the model of a sulphur acid plant chimney located in San Lorenzo, near Rosario. In the final stage, the reduction of nitrogen oxide on its surface was studied. The results were similar to the ones obtained in the study of sulphur oxides.

The aim was to demonstrate that the application of the catalyst inside the industrial chimneys that emit combustion gases reduces the SO2 emissions in a 99.9% and those of NO_2 in a high percentage (the

confirmation of the removal efficiency of NO_2 depends on the application of the catalyst at real scale).

The process is highly efficient and inexpensive and it does not generate derivatives that should be treated afterwards (this reduces even more the operative costs of this technology). Besides, it is regenerative and has a long lifetime, about three months of continual use at pilot plant scale, which must be confirmed once installed and implemented at real scale. As a consequence, the plant would be in condition of complying any law regarding the level emissions of these gases to the atmosphere.

In order to achieve results at industrial scale, it is necessary to install and experiment the behavior of this catalyst in a chimney. The main objective of this technological transference project is to reduce sulphur and nitrogen oxides concentrations emitted in industrial chimneys with high efficiency, and reduce the methane emissions due to its oxidation and conversion to CO_2. It is important to remember that a CO_2 molecule has a 21 times more pollutant effect than a CH_4 molecule in the atmosphere.

This process involves a technology to reduce sulphur dioxide and nitrogen levels produced by combustion gases generated in industrial plants based on the adsorption of these on the catalyst Cr_2O_3/Al_2O_3 surface. The advantages of its application are the following:

- It is an efficient process: the results at laboratory and pilot plant scale (developed in 10 years of research) show an efficiency of 99.9 % in SO_2 retention.

- It is safe: due to the fact that it uses a catalytic support that works by means of the gas physical adsorption, there is no risk for operators who install it and monitor its operation.

- It is low cost: the approximate cost is 5 to 7 US$ a kilogram.

- Regenerative: after the surface saturation, it can be regenerated up to three times without losing adsorption efficiency.

- It does not generate derivatives which should be treated afterwards as hazardous materials.

And in the case that they are generated, it would be in very small quantities a year.

At laboratory and pilot plant scale, its efficiency was confirmed for the SO_2 adsorption in presence of other gases which can normally be found in an industrial chimney, such as CO_2, CH_4 and O_2, and taking into account other fundamental conditions, such as temperature, gas flows, dimensions of experimental equipments, etc. The SO_2 and NO_2 joint adsorption over the Cr_2O_3/Al_2O_3 catalyst, under the same experimental conditions, was also studied.

The application in an industrial chimney of the devise developed in this project is fundamental in order to study its behavior at real scale and the interaction of the designed product with the compounds and conditions present there.

Soil and groundwater contamination

Soil and groundwater contamination is one of the major environmental problems in Argentina. There are different contamination sources: industries, open-air dumps, septic wells, intensive livestock farming, hazardous substances spills, open-pit mining, use of agrochemicals, abandoned gas stations, etc. The pollution of these resources, which affects the life quality of people and the environment, is increased by production excess and the waste they generate during and after the products are consumed by the society for which they are destined, by the increasing consumption of meat, by the generation of fossil fuel energy, by the non-sustainable extraction of renewable and non-renewable resources to satisfy sumptuary needs, etc.

Hereunder, we will analyze four cases of remediation of contaminated soil and groundwater; these remediations were directed by the author of this chapter within the framework of UCEL's environmental activities and funded by "La Segunda CLSG" Insurance Company. Remediation is the set of corrective operations destined to avoid the harmful effects that a contaminated soil causes or could potentially cause. Appropriate measures must be adopted to restore the altered physical situation or to prevent new risks for people or damages in goods or the environment. The technology remediation choice must be based on the results of previous environmental studies performed in the site. As a first measure, the pollution source must be eradicated, and then the remaining pollution must be eliminated or neutralized, in order to eliminate the risk it represents to people's health and to the environment. Naturally, the purpose of a remediation is to achieve that remaining values of soil and groundwater pollutants are inferior to the ones established by the current legislation, that is to say, to restore the natural conditions of the environment, reducing the concentration of pollutants to an acceptable limit. In order to optimize resources, analyze the intrinsic effects of the remediation process and evaluate the progress of the tasks, it is necessary to control and monitor the systems.

Soil remediation in an abandoned gas station contaminated with hydrocarbons in the city of Rosario, Argentina

In a case of soil contamination by hydrocarbons there are three alternatives, taking into account the behavior of crude oil and its derivatives in soil: a) not remediating the contaminated soil, b) containing or isolating the contamination, and c) remediating the contaminated soil (by in situ or ex situ treatment). In the first case, the decision implies that the land use must be changed, the affected area must be perfectly delimited, and monitoring must be done to ensure that third parties are not harmed. The second alternative consists in

establishing correct safety measures to prevent pollution progression and mitigating adverse effects caused by the dispersion of pollutant substances. Isolation can be used to reduce volatilization, to avoid the creation of leachates or the infiltration in phreatic layers. Finally, the contaminated soil is recovered or remediated by different technologies.

Cleaning techniques of a soil contaminated by hydrocarbons can be classified in *in situ* treatment techniques (the elimination of pollutants on the ground, without the removal of the soil) and *ex situ* treatment techniques (the soil is transferred to other facilities for its treatment or confinement). The first ones have the advantage that can be applied to different situations and have competitive costs, but the disadvantage is the existence of a degree of uncertainty upon their actual results. The second ones have the advantage of being effective, a better process control can be made and they are independent of external factors, while their disadvantage is that they have a higher cost.

Gas stations have buried tanks that contain remnant of hydrocarbon. Corrosion deteriorates these tanks, and as a consequence they produce soil and groundwater contamination. When someone wants to construct a building on this type of ground, there must be no environmental liabilities there. Environmental liabilities are the waste that remains in the soil after human activities that are no longer carried out.

A soil and groundwater characterization study was requested in order to evaluate the existence of environmental liabilities and implement remediation tasks, in accordance with current legislation. Naturally, before the diagnosis, the buried tanks were removed and sent to an authorized processor for their cleaning and later scrapping.

The site was previously affected to liquid fuel selling operations and abandoned for more than five years. It was located in the city of Rosario (Argentina), in an urbanized area with an average population density and a mixed urban typology (commercial and residential). The area had running water and sewer services, so there was not catchment of

groundwater for human consumption. The soil profile featured a brown-colored sandy-clay texture over a sandy-loam material, whose color varied from greyish brown to dark grey. The soil's medium porosity was taken into account when carrying out the treatment, which allowed to extract the hydrocarbon gases coming from the soil by vacuum extraction (Soil Vapor Extraction – SVE method).

All of the tasks were developed according to operation standard processes established by national and international regulations (ASTM, IRAM, among others). For analytical determinations, methods defined by USEPA, ASTM or other internationally accredited regulations were used. A strict protocol was followed in order to ensure the sample preservation. The protocol was based on the samples monitoring by using Chains of Custody (CoC), which ensured their inviolability until their arrival at laboratory. According to what is exposed in the RG-14/PST technical provision of the TNRCC (Texas Natural Resource Conservation Commission – Petroleum Storage Tank Division – Soil and Groundwater Sampling and Analysis), the following compounds or compound groups were defined as Compounds of Interest (CoI), based on their high toxicity degree:

- GRO (Gasoline Range Organic Compounds) + DRO (Diesel Range Organic Compounds): Total Hydrocarbons – Hydrocarbon Range Content
- GRO-DRO (Gasoline-Diesel).
- TPHs: Total Petroleum Hydrocarbons.
- BTEXs: Benzene, Toluene, Ethylbenzene y Xylenes.
- PAHs: Polynuclear Aromatic Hydrocarbons.

Three areas were studied, with exploration lines at a distance of 0.5 m to obtain a proper resolution. 12 soil explorations (representative sampling) were performed considering a maximum depth of 5 m. Soil samples of 1 m, 3 m and 5 m were extracted from each one of them

(slightly above the phreatic level). Besides, an up to 5 m deep exploration was made in the tanks zone, obtaining a total of 37 soil samples. Soil explorations were made with mechanical drilling rigs. The samples were extracted by german-type boreholes, properly decontaminated before taking each sample (a soil sample extraction equipment with a helical-shaped tip for drilling, with 1 m long coupling bars, was used). Soil samples were put in disposable plastic trays and they were bottled in glass jars with metal lids (with aluminium foil as insulator). They were remained refrigerated until their arrival at laboratory for analysis. Six of the explorations were deepened for subsequent piezometer installations. These were made up to 2 m below the static level of the phreatic layer, which was found at an average depth of 5 m at the time of the operations. A reinforced PVC piping of 63 mm was used for the slotted part and for the blind part. The slotted pipe, with a polyester mesh filter, was extended from the bottom of the well up to 2 m above the estimated static phreatic level at the time of the perforation, while blind piping with the same diameter was used for the upper part. In the annular space formed by the well wall and the slotted pipe, selected gravel of 1 to 1.5 mm diameter was collocated as a kind of filter. In order to prevent superficial water infiltration through the space between the pipe and the perforation, fine sand, bentonite and cement were used to seal the gravel filter. The piezometers were finished by closing their upper holes with PVC hermetic lids. Finally, pavement boxes were installed to protect the premises. The next step was piezometers' cleaning, extracting four times the volume of water contained in each well.

The characterization study of the soil and groundwater contaminated with hydrocarbons allowed us to know that the volume of the remnant affected soil on the spot was approximately 200 m^3. According to the analyzed samples, it was concluded that the area was dangerous for

residential use. Therefore, it was declared as "a site where it was necessary to carry out remediation tasks".

According to the values indicated in the New Dutch List (NDL) (2000) as concentration limits of analytes derived from hydrocarbons, it was observed that the 4 to 3 m deep exploration and the 6 to 3 m deep exploration exceeded the maximum values permitted for TPH in soil. The rest of the explorations made at different depths showed values within the standard. The PR 03 and PR 08 piezometers exceeded the maximum values allowed for TPH in water. The rest of the piezometers showed values within the standard.

The proposed method for soil remediation consisted in an *in situ* technique, due to its low contamination rate. Different drillings were made on the detected spots, up to 5 m deep, for chemical oxidation with H_2O_2 (hydrogen peroxide in low concentrations), to produce the degradation of pollutant materials. Hydrogen peroxide is a chemical compound that decomposes in water and oxygen, both non-toxic products. Chemical treatment allows to reduce contamination in very short periods of time compared to other technologies, and to achieve a clean soil. The oxidation with H_2O_2 is made with an alkaline pH (8,3). This requires an addition of hydrated lime to the soil and the lime mixture with the soil, or injecting the dissolved lime through the existing wells, in order not to remove the soil under the concrete layer of the gas station. Likewise, the SVE technology, Soil Ventilation or Vacuum Extraction, was used. This is a method reduces the concentration of volatile components adsorbed in soils in the unsaturated zone. With this technology, all the vapors generated by the soil oxidation can be extracted. This procedure consists in applying vacuum through the extraction holes in order to create a pressure/concentration gradient that induces the removal of vapor-phased volatiles from the soil by means of

production wells, an appropriate treatment on surface and emissions to the atmosphere.

Two months after the beginning of the tasks, soil samples (and their subsequent analysis in a laboratory) were taken in order to verify the achievement of the remediation's general objectives. Control of the remediation tasks was made for six months. Later, a new sampling was carried out, with its subsequent analysis in an authorized laboratory.

As regards the *in situ* groundwater remediation, given the presence of dissolved hydrocarbons in the phreatic level water, new extraction wells were drilled, generating a depression center to extract the contaminated water for treatment. The extraction wells (piezometers) were made with a "Solid Stem Auger" drilling equipment, which can dry drill without disturbing the material to be collected or the local aquifer. The system used to build the piezometers works without the injection of any type of fluid, since not only the injection of water, but also of air, produces alterations in the original condition of the medium to be sampled. The introduction of any liquid volume into the aquifer might produce a displacement of the hydrocarbons in forms of free phase or dissolved phase that could be present in the medium, resulting in a false negative. Moreover, at the time of drilling into the aquifer, no "foreign material" (drilling mud) is altered or incorporated into the aquifer, altering the aquifer itself and/or possible contaminants in different phases. The piezometers were constructed in accordance with ASTM D 5092-90 (Standard Practice for the Design and Installation of Groundwater Monitoring Wells in Aquifers). Likewise, water samples were extracted using control piezometers in order to verify the decrease in water contamination. The contaminated water is extracted by a submersible pump and it circulates to the plate separator (capable of separating the Non-Aqueous Phase Liquid, NAPL, if any). The water then circulates up to a water separator. The separator is a three-staged equipment, designed to separate and extract non-emulsified

hydrocarbon, solids and air trapped by oily water. The system consists in three stages for the separation process of oily water into a single cylindrical vertical container, subjected to pressure/vacuum. The stages include: 1) the separation by density difference between hydrocarbon and water, and the reduced flow speed of the affluent, 2) the coalescence of the hydrocarbon running over a matrix of parallel corrugated plastic plates, 3) the coalescence of small residual droplets of hydrocarbon is obtained by their passing through a steam separator device (demister) of polypropylene foam. This design provides the most effective and efficient way of separating hydrocarbon from water, because the separation devices, the parallel plates and demister are non-consumable. The recovered hydrocarbon was stored to be transferred to final disposal by an authorized vehicle. The water that was collected from the third stage was tested *in situ* with a hydrocarbon-content meter that was incorporated on the separation equipment, generating "pass" or "no pass". Samples of the treated water were taken during the procedure and they were sent to an authorized laboratory for analysis. Control was made for six months in order to verify the effectiveness of the performed remediation tasks. After this period, a new sampling was carried out with its subsequent analysis in an authorized laboratory.

After approximately two months of soil remediation tasks and just starting the groundwater remediation tasks, a scheduled control sampling (first monitoring) was carried out to define the site's situation. For this purpose, 5 soil explorations were made considering a maximum depth of 5 m. Soil samples were extracted from each one of them at a depth of 3 m and 5 m (slightly above the phreatic level, as it has been stated). The location of the explorations was defined according to the characterization study in the areas where greater contamination had been detected. The soil explorations were made with mechanical drilling rigs (PVM 6000 Helix hole digger with helical coupling bits), up to the

established depth. The samples were extracted using German-type boreholes, properly decontaminated before taking each sample. Soil samples were put in disposable plastic trays and they were bottled in glass jars with metallic lids (with aluminium foil as insulator), and remained refrigerated until they were carried to the laboratory for analysis. Then, groundwater samples were taken from the same piezometers characterized in the characterization study, and they were bottled in glass jars and refrigerated. Finally, the leveling of the monitoring well was carried out. Besides, a sample of the treated stored water was taken, before being disposed in the roadside. To ensure the preservation of the samples, a strict protocol was followed. The results of this first monitoring showed that the obtained values for Benzene, Toluene, Ethylbenzene y Xylenes (BTEX) and the Polynuclear Aromatic Hydrocarbons (PAHs) in soil were within the standard; but this was not the case of the Total Petroleum Hydrocarbons (TPHs). The concentration values of the evaluated CoI in groundwater did not exceed the established values. The liquid effluent samples showed that the values did not exceed the required guide level for its spill on the roadside.

The next steps were: steam extraction and hydrogen peroxide injection (in low concentrations) and superficial water recovery tasks. Superficial water was treated by the separation equipment and then spilled into the fluvial channel. At the same time, a sample of the gaseous effluent was taken at the entrance of the activated carbon filter and in the chimney tube exit to verify the efficiency of the filters and the evolution of the remediation tasks.

Two months after the first monitoring, the closure sampling was made with 5 soil explorations for taking samples at different depths, up to a maximum of 5 m (second monitoring). From each one of the wells, 1 m, 3 m and 5 m soil samples were extracted. The location of the explorations was defined according to the characterization study in the

areas where greater contamination had been detected. Then, the leveling of the monitoring wells was performed, and 15 water samples were taken from the piezometers characterized in the initial and control monitoring; 2 additional piezometers were added. According to the results obtained in this second monitoring, all the soil samples showed that the concentration values of the evaluated CoI did not exceed the established values. The same happened with the groundwater samples. Liquid effluent samples showed that the values did not exceed the required guide level for its spill on the roadside.

Then, equipment was disconnected and removed. All the exploration wells built during the remediation tasks were sealed, only keeping the wells covered with hermetic PVC lids and sealed with pavement boxes for protection. The final disposal of the gathered soils (because of the drilling) and the activated carbon used by the steam extraction equipment was carried out in plant, via authorized transport.

Six months after the soil and groundwater remediation, the characterization of both was performed in order to ensure the remediation effectiveness. For that purpose, a final monitoring with 5 soil explorations was conducted, with a maximum depth of 5 m. In total, 14 soil samples were obtained. Soil samples of 1 m, 3 m and 5 m were extracted. The location of the explorations was defined according to the characterization study, since they were areas where greater contamination had been detected. Explorations and sample collection were performed in the same way as in the characterization study. In this final monitoring, it was observed that the concentration values of the evaluated CoI in the soil and groundwater samples did not exceed the guide values established in the NDL. Hence, it was concluded that it was no longer necessary to carry out further remediation and/or recomposition tasks in the site.

Soil remediation in an ecological reserve contaminated with diesel-oil (Comandante Andresito, Argentina)

In September 2014, a truck that was heading from Wanda to Andresito in Provincial Route 19, in the north of the province of Misiones (Argentina), overturned due to unknown causes in the right shoulder of the road, 14 km away from Comandante Andresito town. The truck was transporting 38,000 liters of diesel oil, of which approximately 33,000 were spilled, naturally producing a hefty negative environmental impact. The spill took place within Urugua-í Provincial Park, less than 5 km away from Yacuy creek, which flows into Iguazú river. The provincial park is a protected natural area and has an extension of 84,000 ha. Its purpose is to protect the ecosystem of Urugua-í creek's basin, and to counteract the negative effects of Uruguays dam, located downstream from the park. Along with Iguazú and Iguaçu's national parks, located in Argentina and Brazil respectively, this park constitutes the largest reserve of the Paranaense rainforest. The area's climate has eased the *in situ* decomposition of the subsoil rocks (basaltic rocks), generating a soil with a high content of iron oxide, aluminium and silica.

Initial and final characterization tasks as well as the remediation tasks were carried out by "Soilkeeper S.A." company, directed by the author of this chapter.

In a case like this, there are two types of diagnosis methods for soils contaminated with hazardous materials: a) invasive or traditional methods, in which the contaminated soil is drilled and samples from different depth are extracted for chemical analysis, and b) non-invasive or electromagnetic methods: the geoelectrical method and the electromagnetic induction method (EMI), among others. In this case, both methods were used, but since the first ones (mass balances, soil samplings, monitoring) are better known, we will briefly describe the second ones.

The geoelectrical method seeks to obtain a picture of the cortex in terms of the electrical resistivity variations of the ground, both lateral and in depth. A continuous current artificial source is used, which is injected in the soil through a pair of electrodes. Potential difference measurements are carried out by another pair of electrodes, and soil resistivity is determined by electrical current measurements. The depth of penetration depends on the experimental device's geometry, the distance between the electrodes and the power source provided by the current. On the other hand, the device used in the electromagnetic induction method (EMI) consists in two coils: transmitter and receiver, separated by a constant distance, which are displaced throughout a line. Sinusoidal signals are sent and received via these coils. A primary alternate electromagnetic field is transmitted, which induces a secondary field in the soil. In the presence of a buried material, the secondary field will depend on this material's conductivity compared to the conductivity of the environment. The field detected by the receiver is the overlapping of the primary field and the induced secondary field. The depth of penetration varies by changing the signal frequency. After processing the data through computer programs, a conductivity map based on the depth is obtained. In the geoelectrical method, data modeling is easier and the obtained results are more accurate, but its application is slower and placing electrodes in the site is needed, while the application of the EMI method is faster and there is no required direct contact with the soil, but the data modeling is complex.

The latest contaminated soil evaluation techniques are based upon the ASTM E1739/95 risk analysis methodology, developed by the American Society for Testing and Materials, which is based on the risk that the chemical agents' sum of individual risks to human health and to the environment. A first evaluation is based on the comparison between the values of the individual pollutants found in the soil and the

reference values, which are very conservative. Generally, the most appropriate in situ methods for the remediations of contaminated soils are: Bioventing, Soil Vapor Extraction (SVE), Chemical Oxidation (which was the method used in this case), Stabilization / Solidification. Other in situ methodologies are not applicable to road accidents because of the operational complications (phyto-remediation), the country's lack of equipment (electrokinetic separation), the lack of authorization to pressure-inject fluids (fracturing), the non-applicability to hydrocarbons (soil washing), the need of high complexity equipment (thermal treatment) and high local electric energy requirements as well as the equipment's high costs (vitrification). The chosen remediation methodology must be a balance between technical, environmental, legal and economic aspects.

In the case of phreatic layer's contamination with hydrocarbons, the most appropriate methodologies are: Air sparging, Bioslurping and Dual-phased extraction. The physical-chemical characteristics of the spilled product also influence the decision to apply one or another methodology, particularly its vapor pressure and its water solubility.

A 600 m long and 10 m wide affected area was detected on the impact zone upon the road shoulder and the loan area. The fuel spilled along a roadside located between the hill and the loan area, with a length of 170 m and a variable width of 1.5 m toward the town of Wanda. On the other side of the road, affected soil and water were found, due to the spill of the fuel across a ditch, with a length of 180 m and a variable width of 1.5 m. A surface water course was found in the area, formed by the rainwater draining ditch that is connected to Yacuy creek through a canal, which flows into Iguazú river, upstream of Iguazú Falls. In order to avoid the spread of the contaminated area and to contain the fuel spill, two landfills were built 130 m apart from each other in the area of the oil recovery well made during the emergency tasks to remove the fuel with

absorbent cloth and to avoid the contamination of Yacuy creek. There were no inhabitants within a 7 km radius.



Pictures 5 and 6. Sampling tasks to study the degree and type of contamination in the Yacuy stream.

An initial characterization study of the area was made in order to determine the affected site's situation. Some spots on the canal and Yacuy creek were also characterized to rule out the spread of the contamination into Iguazú river. 24 soil samples were collected and bottled in glass jars with metallic lids and insulating aluminium foils. 7 water samples were collected and put in brown-colored glass bottles, with front and back lids. A strict preservation protocol of the samples was followed.

A few weeks later, additional samples were collected: 5 soil samples and 3 water samples. The following compounds were defined as Compounds of Interest (CoI), respectively using EPA 418.1, EPA 8015 and EPA 8270 analysis methodologies:

- TPHs (Total Petroleum Hydrocarbons)
- BTEXs (Benzene, Toluene, Ethylbenzene y Xylenes)
- PAHs (Polynuclear Aromatic Hydrocarbons)

The results of the initial characterization study were alarming. Some of the water samples exceeded the limits for different PAHs, the so-called naphthalene, acenaphthylene and fluoranthene, as well as the guide value of the TPH analyte. Some samples exceeded the

intervention level established in the NDL for the so-called TPH CoIs: total petroleum hydrocarbons, ethylbenzene y xylenes. Some of the soil samples exceeded the guide levels of toluene, ethylbenzene and xylene analytes. Moreover, they exceeded the limits for different PAHs, the so-called naphthalene, phenanthrene, pyrene, benzo(a)anthracene, dibenzo anthracene and indene (1,2,3-cd) pyrene. Likewise, some samples exceeded the intervention values considered for the so-called TPH and PAH CoI established in the NDL. Based on the obtained analytical results and the selected parameters in the initial characterization, the estimated volume to remediate was of 840m^3, dispersed in an affected area of approximately 4200m^2. As regards water, quantifying its volume was not possible due to its flowing and its fluctuation level.

On the first remediation stage, after signalizing the working area, the heavily contaminated soils were removed for their transport to the oil company's construction site shed for transitory storing, before being sent to final disposal. Some of the soils transported to the construction site shed (the least polluted), with a volume of approximately 70m^3, were stored for further *in situ* treatment. Simultaneously, wells and ditches were built on the affected area in order to recover supernatant via a pneumatic pump, which was stocked in a container and left for decantation to separate water from fuel. The recovered water was oxidized with low doses of hydrogen peroxide to be reused in the soil washing. A total of 313.41 Tn of contaminated soil, 0.38 Tn of absorbent cloth and 2.36 Tn of NAPL were removed and put in containers. The soil washing was carried out using the recovered and hydrogen peroxide-treated water, which was spilled again upstream in the previously built wells and ditches. With this procedure, the treated water is drained again up to the downstream ditch, washing and oxygenating the contaminated soils and displacing the retained hydrocarbons in the interstices of rocks and sands, and it is recovered in the ditches to restart the washing process. The soils from the bases of the

digging areas, from which the soils were removed for *ex situ* treatment, were stabilized with industrial-quality anhydrous calcium oxide together with the *in situ*-treated soils, leveling their pH with peat. Finally, low doses of hydrogen peroxide were added in order to oxygenate the soil. Then, the soils stored in the construction site shed were treated via stabilization with calcium oxide and irrigation with hydrogen peroxide. At last, the diggings were covered with replacement soil and the working area was compacted and leveled.

As we can see, the chemical oxidation methodology, also called reduction-oxidation or redox reaction, was used in this first stage of remediation. The method basically consists in a chemical reaction in which one or more electrons are transferred between the reagents, causing a change in their oxidation states. The results of this first remediation stage were successful. Regarding the exceeded values in water samples, oxidation tasks using low doses of hydrogen peroxide were made after the sampling.

On the second stage of the remediation tasks, in March 2015, soil treatment by means of *in situ* chemical oxidation continued on the opposite side of the impact zone, on the landfill area where the hydrocarbon was being kept as a result of soil washing. For that purpose, the contaminated soils were moved to the roadside via road machinery for their stabilization with industrial-quality anhydrous calcium oxide; then, the pH was leveled using peat. Once they were relocated in their place of origin again, hydrogen peroxide in low concentration was injected to oxygenate the soils. Two months later, final remediation tasks were resumed and the impact zone's roadside soils were treated *in situ*. These soils were gathered on a side by means of road machinery and stabilized with calcium oxide. As they were relocated in their place of origin, an oxidation with hydrogen peroxide in low concentrations was carried out. Lastly, about 300 lineal m parallel to

the road were treated. For that purpose, the working area was signalized and the soils were removed using road machinery and stocked on a side as the waterway was opened, and stabilized with calcium oxide. They were later relocated in their place of origin and hydrogen peroxide was injected in low concentrations. Finally, the soils were replaced and transferred by a dump truck and scattered on the treatment area using road machinery, together with the previously treated soils in the construction site shed. The area was compacted and the whole working area was leveled.

In December 2015, complementary remediation tasks were carried out in the areas with contamination remnants in the superficial water. Those tasks consisted in irrigations with hydrogen peroxide in low concentrations. After that, a new monitoring focused on those areas was developed in order to verify the effectiveness of the tasks. Then, superficial water sampling and final samplings were performed.

According to the results obtained in the verification monitoring, no superficial water sampling exceeded the guide level established by current regulations (Decree 831/93, regulatory of National Law 24,051; NDL intervention values). Therefore, the site was declared as a place where it was not "necessary to conduct further remediation and/or recovery tasks" in superficial water and soil.

The effectiveness of the used remediation methodology, chemical oxidation, was demonstrated, and in this way we avoided the contamination of a protected ecological reserve as well as the contamination of Yacuy creek and Iguazú river, which flows into Paraná river.

Soil and groundwater remediation in site contaminated with agrochemicals (Villa Ocampo, Argentina)

The contaminated site was located in an urbanized area, with a middle population density next to National Route 11. The property

belonged to Unión Agrícola de Avellaneda Cooperativa Limitada (Agricultural Union of Avellaneda, Limited Cooperative Association), branch Villa Ocampo, National Route 11, km 873, in the province of Santa Fe (Argentina). The soil profile featured a brown-colored sandy-clay material over a sandy-muddy material whose color varied from brown-gray to gray.

In January 2014, 12 explorations of contaminated soil were performed, considering a maximum depth of 6 m. In each one of them, samples of soil were extracted at 1 m, 3 m and 6 m (up to slightly above the phreatic level). In four of them, piezometers corresponding to the four cardinal directions were built. The perforations were made up to 2m below the static level of the phreatic layer.



Pictures 7 and 8. Invasive soil and water table sampling tasks in a property contaminated with agrochemicals (Villa Ocampo, Argentina)

Reinforced PVC piping was used for the slotted part and for the blind part. In the annular space formed by the well wall and the slotted pipe selected gravel was collocated as a kind of packaged filter. 36 soil samples were obtained, stored, sealed in glass jars, and kept refrigerated until they were carried to the laboratory.

In the four piezometers the following tasks were performed:

- well purge

- well cleaning, in order to leave it ready to stabilize later and allow the aquifer restoration
- static phreatic level measuring
- phase detection. Non-Aqueous Phase Liquid (NAPL) was not found.

After these tasks, water samples were taken at a depth of 10 m, and then carried to the laboratory.

The laboratory was properly authorized and worked under strict quality control procedures. For analytical determinations, methods defined by USEPA, ASTM or other internationally accredited regulations were used. The samples were appropriately preserved and identified. A strict protocol was followed to guarantee the samples preservation; the protocol was based on the samples monitoring by using Chains of Custody (CoC), which ensured their inviolability until their arrival at laboratory.

The copper value analyzed in soil taken as blank, outside the Cooperative area, was of 5.3 ppm. This value is within the range of the ones obtained for the wells made inside the Cooperative area. This parameter was analyzed because it was not included in the analyses performed by the Laboratory General Direction (DGL in Spanish).

The analytical results of the samples taken in January showed that:

- soil: in none of the analyzed samples pollution levels above the ones established in Decree 831 of the Law 24,051 and in the NDL were found,
- water: all the analyzed samples met the established guide levels.

Superficial soil samples were not extracted because level pollution in superficial soil was already known thanks to the analyses performed by the DGL six months before, in July 2013. The soil samples taken in that moment showed parameters of interest detected for different pesticides. Eight superficial soil compound samples from 0 to 40 cm

(in stirred area) and from 0 to 20 cm were extracted. Furthermore, 3 compound soil samples were taken from 70 cm to 1 m in the area near the affected warehouse. Phreatic water samples were not taken. The analyses showed that:

- soil pollution was located from the surface up to less than a depth of 1 m. At a depth of 1 m there were no significant values of the pesticides that were analyzed and detected as parameters of interest by DGL;
- phreatic water was not polluted by the determined pollutants;
- the compound samples taken by DGL at a depth between 70 cm and 1 m showed detected parameters of interest, but these were not found in the sample taken at 1 m. This can be due to the fact that the pollutants had moved from the superior soil layers or to the probable degradation of one of them by microbial action;
- no significant differences were found in the pollutants detected in the different wells below a depth of 1 m, no matter the wells location.

Based on the sampling performed in July 2013 by DGL and in January 2014 by the author of this chapter, the proposed soil remediation method included soil inside the warehouse and external soil surrounding the warehouse from the gate to the wire fence. The depth of the remediation was of 1 m and the methodology used was *in situ* remediation by chemical oxidation with hydrogen peroxide in alkaline medium. This was due to three facts: the sampling and analyses performed by DGL showed that there were no soil pollutants under a depth of 1 m; in the sampling at a depth of 1 m up to the phreatic layer, analyses performed after the remediation showed that there was no pollution neither in soil nor in water; this methodology was the most inexpensive compared to the other methodologies that could have been used in these conditions and allowed the Cooperative to keep operating

during the remediation tasks. As a result, it can be concluded that the remediation was successful.

Soil remediation in a rural zone site contaminated with hydrocarbons (Alejo Ledesma, Argentina)

August 31st, 2003. Route 8, km 428.6, 3 km away from Alejo Ledesma, province of Córdoba. A truck heading for La Carlota overturned in the Alejo Ledesma – Arias road shoulder. A mix of 9,000 liters of refined gasoline and 27,000 liters of diesel oil was spilled.

The area affected by the spilt had maximum 70 m long and 18 m wide. Chemical analyses showed that at a depth of 1 m in the soil in the central area of the hydrocarbon spilt was 60,000 ppm; at a depth of 2 m, 410 ppm and at a depth of 3 m, 107 ppm, which showed an obvious reduction of pollutant amount as the depth increased. Water samples were extracted; the analyses demonstrated the presence of traces.

The affected surface was around 700m^2, with an average depth of 2 m. This indicated that the volume of contaminated soil to remediate was 1500m^3. The affected soil was typical of shoulder areas, with features that make them unable for other uses, due to the fact that their original structure is modified due to the tasks performed to make the route (soil compaction), and therefore they are not suitable for farming.

In the area there were no permanent superficial water streams, only little dispersed minor streams and temporary surface runoffs which drain the water and form pools of different sizes, due to the excessive level of soil saturation and to the fact that the phreatic layer is very near the surface (2.5 m). These factors cause the water runoff in subsoil to be slow and difficult. The area was a rural zone, with no urbanization. The nearest populations were Alejo Ledesma, 3 km away (South West direction) and Arias, 20 km away from the spilt site.

Studies that included drilling and sampling were performed in order to develop a preliminary diagnosis to determine the different

concentrations and variations of the pollutant, in horizontal and vertical directions. Samples were taken in different areas of the contaminated site.

A quick and precise localization of potentially contaminated areas allows to make an efficient distribution of the wells, and the subsequent reduction of costs and time. An efficient strategy to investigate contaminated soils is:

1. To locate anomalous electrical areas by means of a quick EMI prospection.
2. To take into account the result of this prospection, to select some representative areas in order to perform geoelectric profiles. To delimit geoelectrical anomalies and to compare them with the results obtained by EMI. To validate and specify these results.
3. To dig few wells in selected areas and measure their contamination levels.
4. To correlate the geophysical and chemical results in order to select the anomalies which are probably due to the pollutant. To perform further chemical analysis if necessary.

Once the contaminated soil volume has been specified by means of this procedure, a suitable remediation methodology can be chosen.

In July 2004, samples were taken from soil wells in order to carry out mechanical essays with test tubes with contaminated material and cement in different proportions. The aim was to determine the ideal percentages as a result of solidification and waterproofing of stabilized soils. In December of the same year, an environmental assessment study was performed with analytical determinations of hydrocarbons in soil and water. Two laboratories conducted the analyses. Test tubes with different options of soil-cement and soil-cement-bentonite mixtures were carried out for the contaminated soil stabilization. These mixtures

were tested in the laboratory for different periods of time to simple compression and to hydraulic conductivity.

Samples of the test tubes permeate of hydraulic conductivity were taken in order to determine their leacheate. They were analyzed in laboratory. The remediation tasks were performed in the soil above the phreatic layer, which was at a depth of about 2.5 m. According to previous data, the greatest pollutant concentrations, expressed as TPH, were 1 m below the terrain level and significantly decreased as the depth increased. Below the phreatic level only traces of the pollutant in aqueous phase were found. These results showed that the greatest amount of the gasoline and diesel oil spilled was caught in the soil as an isolated phase above the phreatic level.

After a thorough analysis of the obtained data, it became clear that the best technical and economical methodology for the contaminated site remediation was the *in situ* "Stabilization / Solidification" method. This methodology consists in mixing the soil contaminated with hydrocarbons with cement in order to put the pollutant phase inside a solid matrix, to eliminate any probable liquid excess and to reduce the risk of pollutant leak. In other words: the use of this method in this case had the objective of building a monolithic solid with the pollutant either caught inside or making part of the isolated solid matrix by cement addition. In this way, any probable liquid excess is eliminated and the risk of lixiviation is reduced. This method is used to remediate and transform liquids and semivolatile waste materials in a safer and environmentally friendly way. The transformation of contaminated material into a solid block reduces the surface area (surface area per unit mass), or exposition surface, thus diminishing the interaction with the surrounding area. In this way, the pollutant contact with the environment is avoided, due to the fact that the pollutant is macroencapsulated within the solid block. This methodology was chosen because the amount of contaminated soil was so large that its removal for incineration and its

subsequent replacement for new soil would have been extremely expensive.

To sum up, the different stages of the soil treatment were: excavation and extraction of contaminated material, mixture of this material with Portland cement and placing of the mixture in the corresponding area. By this sequence, a very high homogeneity and control of the stabilized material can be achieved. The remediation tasks were performed between August and October 2006. These tasks included: a) the construction of the isolation box, b) the stabilization and solidification of contaminated material, c) the coverage and final isolation of treated material, and d) the design and beginning of a monitoring plan after the remediation.

The basic criteria for stabilization design were: to determine the ideal mixture proportion or design of soil-cement and plastic mixture, to determine the cure time, and to have in mind the possibility of an increase in the solidificated product volume. Cure time is the most important aspect because the resistance criterion is used as a control parameter for solidification, and thus for stabilization of contaminated soil.

Some important aspects during the design of the stabilization process were: to determine the optimal proportion in the soil and Portland cement mixture, to determine the time to fully complete the procedure, and to analyze which would be the volume of the solidified product and the isolation box.

The chosen remediation methodology features additional environmental safety measures, since the insulating barrier serves as protection because of its low permeability, avoiding both water entry and the pollutant's leachate. As stated above, different mixture alternatives of soil-cement plastic and soil-cement-bentonite were analyzed for the construction of the insulating barrier. On the other

hand, soil-cement mixtures were tested in the laboratory for the stabilization of the contaminated soil. In both cases, the following criteria were adopted in order to establish the proper dosage to obtain the mixture with the lowest execution cost:

- For the impermeable barrier: resistance to simple compression after 28 days, RCS28 > 2.0 kg/cm2; hydraulic conductivity, k ≈ 5x10-6 cm/s.

- For the stabilization / solidification of the contaminated soil: strength to simple compression after 28 days, RCS28 > 2.0 kg/cm2; hydraulic conductivity, k lower than x10-5 cm/s. Lower hydraulic conductivity values might be required in contaminated areas with concentrations of less than 1000 ppm, since leachate was not found during permeability tests. In areas with concentrations higher than 1000 ppm, mixtures that have k ≈ 1x10-5 cm/s hydraulic conductivity will be used.

Simple compression is used as a parameter of reference and as a quality control of the screen, while hydraulic conductivity is the parameter that ensures the sealing of the wall screen and the stabilized material.

For these mixtures' design and selection, laboratory tests were conducted in order to determine hydraulic conductivity and strength to simple compression of the samples.

For the screen plate (values expressed in weight):

- Soil from the area (silt) with 8% of cement
- Soil from the area (silt) with 12% of cement
- Soil from the area (silt) with 10% of cement and 3.5% of bentonite
- Soil from the area (silt) with 10% of cement and 7% of bentonite

The following tests were conducted in each one of the mixtures:

- Hydraulic conductivity after 7 days of molding
- Hydraulic conductivity after 28 days of molding
- Simple compression after 7 days of molding
- Simple compression after 28 days of molding

For stabilization / solidification (values expressed in weight):

- Contaminated soil with 4% of cement
- Contaminated soil with 7% of cement
- Contaminated soil with 10% of cement
- Contaminated soil with 13% of cement
- Contaminated soil with 16% of cement
- Contaminated soil with 19% of cement

The following tests were conducted in each one of the mixtures:

- Simple compression after 7 days of molding
- Simple compression after 28 days of molding
- Hydraulic conductivity after 28 days of molding

In both cases, the water content needed to create a plastic mixture, similar in consistency to a cementitious mortar's, was determined. High moisture content was chosen to obtain conservative values.



Picture 9. Soil removal tasks to monitor soil contaminated with hydrocarbons in a rural area and then remedied by stabilization methodologies (Alejo Ledesma, Argentina).

After remediation, six inspection wells were dug up to 3 m deep. The phreatic layer and the presence of NAPL were monitored.

Water monitoring was carried out every six months, and no pollution was found after five periods. This demonstrated the effectiveness of the remediation.

Conclusions

The previous pages show how the University of Centro Educativo Latinoamericano (UCEL), dependent on Argentina Methodist Evangelical Church (IEMA in Spanish), has worked and keeps working responsibly and with a remarkable commitment to achieve the United Nations' Sustainable Development Goals (SDGs) in general and the SDG 12 in particular, subject of this chapter.

In addition to proposing new forms of development for Latin America by means of a solid academic management in teaching, research and extension, UCEL works incessantly to generate efficient processes in order to obtain new foods and to contribute to the objective of covering the food needs of Rosario and its surroundings, by protecting the environment, using regional raw materials, reducing the amount of waste, increasing EE at a low cost. Among the professional training of ITA students, UCEL incorporates the concepts of CP and EE, reuse and recycle of waste, environmental care, awareness of the current development models and social inequity in food access, food sovereignty and safety for all people, especially the most vulnerable, and change in consumption habits.

In order to achieve SDG 12 regarding production in general and food production in particular, productive industries must definitely adopt CP as a method. To reduce fossil fuel consumption, substantial improvement of EE is also needed, in order to avoid GHG emissions and reduce energy consumption. In regard to people's change in consumption habits, the relevance of reduction or elimination of the consumption of unnecessary or superfluous products and the

consumption of products that can be sustainably obtained and satisfy real needs for survival have already been mentioned. Finally, protection of the environmental services that our ecosystem provide us is of extreme importance to avoid pollution and, if pollution occurs, to carry out remediation actions.

In these matters, UCEL continually works to achieve effective compliance of SDGs in order to protect and save our ecosystem. Particularly regarding SDG 12, as this chapter shows, this can be seen in the University's academic offer, in research projects developed in the Pilot Plant and in its headquarters and in the specific remediation tasks performed in contaminated sites.

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ECOLOGY AND SUSTAINABILITY

10

REASSESSING AFRICAN HIGHER EDUCATION AND THE 13TH SUSTAINABLE GOAL (CLIMATE ACTION)

UNPACKING SALIENT CONTRIBUTIONS

Aidan G. Msafiri

Keywords

Sustainable Development Goals (SDG's); climate action, sustainability; higher education; relevance; solution;, alternatives; contribution; excellence; gaps.

Abstract

Fundamentally, the 2030 Global Agenda for Sustainable Development encapsulated with the 17 Sustainable Development Goals (SDG's), occasions a powerful architecture for a new revolutionary global lifestyle and for earth communities locally and globally. This book chapter has a three-fold purpose. First, it re-makes a critical assessment of the 13th Sustainable Development Goal (Climate Action) towards true realization of sustainable development and particularly the contribution of African higher education both pedagogically and practically. Second, it underscores the multi- and interdisciplinary dimensions and functions of all the SDG's especially in providing fundamental principles

strategies, policies, values and motivation as global "game changers" and breakthrough for sustainable and long-term climate justice, anthropogenic sinks and peaceful sustainable living. Nonetheless, it identifies the inherent "*lacunae*" limitations and challenges as whole! Third, on more transformative, methodological and practical perspectives, today's African model of higher education in particular, needs to truly demonstrate result-based innovative, creative, interdisciplinary contributions, solutions and alternatives towards global realization of SDG 2030. Hence, avoiding only the "North, Atlantic and American based solutions and models". Consequently, going beyond the business as usual approaches and dangerous inaction nationally and continentally.

Briefly, the fundamental task and rationale of this chapter is to concretely calibrate and review substantial and concrete contribution of Africa's academia both qualitatively and quantitatively towards realization of SDG 13 (Climate Action). Admittedly, this quest calls for a new African Avant-garde for sustainable climate action solution for and with our collaborative endeavors towards true domestication of key institutional visions, values and strategies towards climate justice and sustainable development as a whole*.

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Sustainable Development Goals (SDG's)

These are 17 highly complex[259] and ambitions global agenda and visions for the sustainability of people, planet and resources. They are profoundly interconnected, inter-disciplinary and interdependent resulting from the former global Millennium Development Goals (2000-2015).

The 13th SDG is specifically focused on climate action as a global "Magna Charta" for climate protection, justice and sustainable livelihood locally and globally. It invigorates also the rest of the SDG's. Briefly, the quest towards global climate protection and environmental stability received substantially greater support and consensus particularly from the Paris Climate Conference and Agreement.

The later was adopted on the 12th December during the 21st Conference of the Parties to the United Nations Framework on Climate Change (UNFCC). Despite its rejection by then US President Donald Trump, the Paris Agreement remains a powerful milestone[260] in climate action and policy.

In recent years, the concept and practice of sustainable development has interchangeably been used also among others as "green growth", "smart growth", "integral development" to mention a few.

Climate Action

This refers to a collective global endeavor to curb multiple and more so long-term drastic effects of climate change and global warming. It has recently been argued that "greenhouse gas emissions are more than

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[259] UN (1992:7-20)

[260] German Advisory Board on Global Change: Special Report "Development and Justice Through Transformation, The Four Big I's", WBGU, Berlin 2016 pp 7-29.

50 percent higher than in 1990. Global warming is causing long-lasting changes to our climate system, which threatens irreversible consequences if we do not act."[261]

Furthermore, from socio-economic, geographic, physical and environmental perspectives, it has been estimated that the "annual average economic losses from climate-related disasters are in hundreds of billions of dollars. This is not to mention the human impact of geo-physical disasters, which are 91 percent climate-related and which between 1998 and 2017 killed 1.3 million people, and left 4.4 billion injured…" Briefly, climate action is a *conditio sine qua non* towards a comprehensive and visionary engagement for the good of the planet, humanity, soil flora, soil fauna for thousands of generations to come. Africa remains the most affected continent ever!

Key Issues at Stake

Admittedly, today the effects of climate change and human inaction are reaching catastrophic proportions. The 17th SDG's and the 13th SDG on climate action provide a vibrant and an outstanding roadmap for sustainability of all forms of life both in short, medium and long-term scenarios. As Archbishop Desmond Tutu once commented, "we do not have planet B. We have only one planet!" Climate action necessarily demands this triad: collective awareness, collective responsibility and collective achievement.

In order to achieve sustainable African societies in particular, Africa higher education need to necessarily re-assess the current climate studies and practices education models, policing action plans as well as strategies. These must necessarily be demonstrated in the learning process, research fitness and relevance as well as community service so

[261] www.africa.undp.org (searched on the 25th March, 2021).

as to achieve "Cradle to Cradle" livelihood and sustainable eco-communities and states in Africa.

Rationale/Justification

First, SDG 13 aptly underscores the universal responsibility for innovative and transformative action for climate justice and sustainability.

Second, SDG 13 and the rest of the 16 SDG's are profoundly interconnected and interdependent. That is they are supportive of one another for better planet and sustainable human and non-human livelihoods.

Third, a critical post-mortem of the current climate change inaction, wanton injustices and indifference both quantitatively and qualitatively locally and globally 13 critical. This demands a re-assessment of the current eco-education models, researches and practices towards more sustainable inclusive and credible eco-solutions and eco-alternatives in Africa in particular and globally in general. Briefly, this must include a plethora of "smarter" eco-curricula, researches, eco-services and strategies.

The African College of Wildlife Management in Mweka on the slopes of Mt. Kilimanjaro in Tanzania is a case in point.

Thought Provoking Questions

What are the intrinsic linkages between all the 17 SDG's? How does SDG 13 contribute to the realization the of other SDG's directly? Indirectly? What are the risks or dangers of dissociating SDG's? To what extent has the African College of Wildlife Management, Mweka domesticated the 13th SDG? What are the effects and socio-human costs of human inaction on addressing adequately, effectively and efficiently

to the climate change and global warming challenges today? To what extent has higher learning in Africa (Tanzania) accommodated the relevance and urgency of domesticating SDG 13 in the teaching, research and community services trajectories on day-to-day basis? What are the strength gaps ("lacunae") opportunities and challenges of the current African higher education specifically on and to SDG 13? Which constructive policy, action plans and strategies' models are be implemented on ground? How are the Alumni being fully prepared for personal and communal climate action? Which current eco-friendly energy sources and practices are being undertaken by African higher learning? Are African institutes of higher learning completely "tabula rasa" of afro-centric eco-solutions and visions? What are the destructive impacts of completely dissociating other disciplines from a climate action education model and practice at the universities in Africa in particular? To what extent has African higher education been a victim of departmentalism and compartmentalization cancers? Is there mutual consensus between the Ministries of national higher education and environment in Africa? Does the government and the policy makers see the nexus between climate action and environmental ethics climate justice? International law and global (national) governance? To what extent are African universities concretely making climate action a number one priority pedagogically, academically and technologically? What are the impacts of climate change skeptics at higher learning in Africa?

The ACTION Methodology

The ACTION[262] methodology stands for:

A=Analysis-qualitative and quantitative.

[262] ACTION developed by the author of this chapter, email: msafiriaidan@yahoo.com, copyright reserved.

C=Convince-Mindsets, views, hearts and lifestyles, etc.
T=Transform-Minds, souls, will power and culture.
I=Initiate-New personal and corporate lifestyles, views and perspectives.
O=Observe-Changes.
N=Network-Collaborative efforts, research consultancy, pastoral outreach, etc.[263]

The structure of the following three parts and subsections is first dealing with climate action and Africa's higher education. Second, it focuses on Africa's higher education and SDG 13, and third, we show the Mweka College's contribution to SDG 13.

Climate Action and Africa's Higher Education: A Critical Theoretical Framework

Global Perspectives

First, according to a recent research by NASA, re-echoes the fact that the "earth's global average surface temperature in 2020 tied with 2016 as the warmest year on record… Continuing the planet's long-term warming trend, the year's global averaged temperature was 1.84 degrees Fahrenheit (1.02 degrees Celsius) warmer than the baseline (1951-1980) mean… the last seven years have been the warmest seven years on record, typifying the ongoing and dramatic warming trend…"[264]

Second, increased quantities of greenhouse gas emissions on our planet have far reaching irreversible consequences to humans, plants (soil flora), animals (soil fauna) as well as to the entire biodiversity matrix for generations.

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264 https://www.nasa.gov/press-release/2020-tied-for-warmest-year-on-record-nasa-analysis-shows

Admittedly, the core functions of higher education are anatomically embodied in the perennial quest to generate relevant knowledge research and communities' transformation. These fundamental roles are tantamount to sustainable development cognitively environmentally, socio-economically, technologically etc.

Third, Bangay, C. and Blum, N. (2010) in their paper titled "Education Responses to Climate Change and Quality: Two parts of the same Agenda?" critically analyse the origins and functions of the Concept of Education For Sustainable Development (ESD). They maintain that this concept (ESD), "emerged in the late 1980's alongside international discussions of environmental protection and sustainable development. It was given much of its shape at the United Nations Conference on Environment and Development in Rio de Janeiro in 1992, and the resulting Agenda 21: '*Education including formal education, public awareness and training should be recognized as a process by which human beings and societies can reach their fullest potential. Education is critical for promoting sustainable development and improving the capacity of the people to address environment and development issues, while basic education provides the underpinning of any environmental and development education, the latter need to be incorporated as an essential part of learning* (UNCED 1992: Section 36.3)'"[265]

Briefly, since then, education for sustainable development has increasingly been receiving special global attention in higher education, particularly by the UNESCO, who led the United Nations Decade of Education for Sustainable Development (2005-2014). This education model for sustainable and development aptly inculcates and integrates multiple cognitive, psychomotor, attitudinal and values as a whole.

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[265] Bangay, C. and Blum, N. "Education Responses to Climate Change and Quality: Two parts of the same Agenda? International Journal of Educational Development 2010, 3014): 335-450.

Learning Capabilities for the 21st Century	
Knowledge	The basic learning content including core subjects; international language ability and broad-based scientific literacy, as well as self-knowledge.
Competencies and skills	These include foundational skills (literacy, oral expression, numeracy); critical thinking and problem solving skills (reasoning, recognising and questioning patterns; dealing with uncertainties; analysing, synthesising and evaluating information); planning and management skills; life-long learning skills (learn how to learn, to adapt knowledge to new contexts and to engage in self-directed learning); cross-cultural communication skills (ability to communicate in different cultural contexts, negotiate and resolve conflicts); and information, media and technology skills.
Attitudes and behaviours	Flexibility and adaptability; risk taking; the willingness to take initiative; motivation; respect for self and others; sense of commitment; empathy; responsibility for ones actions and work.
Values	Solidarity; gender equality; tolerance; respect for difference; mutual understanding; respect for human rights; non-violence; respect for human life; and dignity.

(Source: Haichour, Metzger and Pigozzi, 2007)

Last, it must well be noted that a true and credible action education model for sustainability necessarily demands a profoundly transformative approach which respects and promotes a better quality

and life dignity especially for long-term goals. Indeed, sustainable development goals embody a set of interconnected and interdependent socio-economic, environmental, cultural, legal, ethical, spiritual, political, and technological trajectories and ramifications.

Tanzania and the Sustainable Development Goals

First, from a positive viewpoint it has been indicated that Tanzania has made substantial "significant changes over the past century: poverty rates have been reduced and economic growth has been documented…"[266] Negatively, it has been observed that "public debt remains high and estimations suggest risks to fiscal stability, which need to be acted on. No districts currently have disaster risk reduction strategies in place…"[267] These elucidate some fundamental systemic national strengths and weaknesses particularly as regards Tanzania in the context of SDG's.

Tanzania and Climate Change Trends: Inconvenient Truths and Facts

First, a recent research study on climate systems analysis group from the University of Cape Town shows that Tanzania's ocean coastline is mainly "warm and generally wet with Dar-es-Salaam experiencing a mean of over 1,000 mm/year of rainfall and daily maximum temperatures slightly cooler, ranging from 27^0 C and 31^0C. Mwanza on the coast of Lake Victoria experiences around 700mm/year which is higher than Tabora, most likely a result of moisture supplied by Lake Victoria… The average annual temperature in Tanzania has increased by 1.0 since 1960. The increase in night-time temperatures has been more pronounced than daytime temperatures… Decreases in observed rainfall

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[266] Ifakara Health Institute: Tanzania and the Sustainable Development Goals: Has Tanzania prepared to roll-out and domesticate the health SDGs? See 3.0 National Context about SDGs, 09/01/2017

[267] Ibid.,

has been significant with observations showing annual rainfall decreasing by 2.8mm per month per decade since 1960…"[268]

Second, a prognosis of Tanzania's future climate scenarios indicates that "average annual temperature is projected to increase by 1.0 to 2.7^0C by 2060s and by 15 to 4.5^0C by the 2090s. Hot days and nights will become increasingly frequent… Most parts of the country particularly the central and Northern Zones which are semi-arid are very vulnerable to climate variability and they will be more vulnerable to the projected increase in frequency and of extreme climate events…"[269]

Third, from Tanzania's multi-sectorial viewpoint, "prolonged dry spells with rainfall unpredictability will be common place in the future. These have far reaching negative nutritional consequences causing severe malnutrition, food shortage, decreases in immunity and prevalence of opportunistic illnesses among the populace."[270]

Economically, a recent story on the economic impacts of climate change "estimates that the cost of building adaptive capacity and enhancing resilience against future climate change in Tanzania is US $ 100 to 150 million per year (but probably more) is required to address current climate risks, in reducing future impacts and building resilience to future climate change. The report further states that aggregate models indicate that net economic costs could be equivalent to a further 1 to 2% decline of GDP per year by 2030."[271]

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[268] Tanzania Climate Action Report For 2016: Resilience and Economic Inclusion Team/Irish Aid/November, 2017 p. 6

[269] Ibid., pp 6-7.

[270] Ibid., p. 8

[271] Ibid., p. 8

Africa's Higher Education and SDG 13: A Broad-spectrum Critical Overview

Contribution and Excellence

Curricula-Based Excellence

First, recently there has been a substantially ever-growing special attention and focus among African higher education towards climate-based resilience knowledge and skills. This paradigm shift with qualitative and quantitative contact methods and strategies is currently manifested particularly in the mission, vision and core value statements of most of higher learning institutes. Conversely, today, higher education does not confine its key "engines" of mere knowledge but equally protectors of the natural environment through climate-action skills, research and concrete eco-solutions and services.

Second, McCowan (2019) unpacks two critical trajectories particularly as regards the fundamental roles of Africa's higher education in achieving the SDG's. He strongly emphasizes the two "notions of projective and expressive roles, and the five modalities of education, knowledge production, public debate, service delivery and embodiment. These fledging ideas are filled out, and applied to climate change…"[272]

Research-Based Excellence

Recent research findings in Africa's higher education have unveiled the catastrophic impacts of Green House Gases (GHG's) as a whole. "It shows the research truths that: emissions are approximately 7.1 gigatonnes Co_2 – eq (representing 14.5% of anthropogenic emissions) from the supply chain of livestock every year. Cattle contribute the

[272] Tristan McCowan Centre for Global Higher Education, Working Paper No.55. November Oxford University, 2020 p. 7.

largest emissions (65%) with pigs, buffalo, chicken… Also 2.1million hectares of deforestation have been linked to cattle production…"[273]

It has recently been observed that climate related symposia, clubs, workshops and campaigns contribute significantly to Africa's higher education knowledge and skills on climate resilience. A chi-square test of independence showed the fact that "students' participation in climate change workshops or programs significantly influenced ($X^2 = 9.507$, $p = 0.002$) their level of knowledge on climate change and their confidence about educating others about the phenomena…"[274]

Ethics and Values-Based Excellence and Fitness

First, our (2013:661) eco-ethics edifice epitomizes significantly ever-increasing emphasis and critical nexus, particularly on "value-based, qualitative approaches in responding to the issues of climate justice and sustainability, i.e to go beyond the hitherto quantitative (mathematical) functionalist and legalist approaches, which are neither exhaustive nor sustainable… The present situation calls for a radical paradigm shift to viable and sustainable ethics for climate rights if humanity and the earth are to survive."[275]

Second, among others, our eco-corpus vision and transformative engine succinctly encapsulates the following trajectories, principles and strategies in particular[276]:

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[273] Cfr.www.mdpi.com/journal/environments Mark M. Akrofi Sarpong H et alii 'Students in Climate Action: A Study of Some Influential Factors and Implications of Knowledge Gaps in Africa, p.8

[274] Ibid., p.11

[275] Aidan G. Msafiri "Ethics for Climate Justice and Sustainability through Value-based Approaches: A New Tanzania Model and Paradigm Shift" in Oliver C. Ruppel Christian Roschmann et alii Climate Change: International Law and Global Governance Vol. II Baden, Nomos, 2013, p.661.

[276] Ibid., pp. 675.

-The principle of Integral (Holistic) Climate Care and Compassion:

Today there is a growing individual and collective positive attitude particularly in promoting a "non-business as usual" culture and virtues towards the planet and climate challenges[277].

-The Principle of Globalization of Climate Action Concern

This unleashes a powerful new climate action ethos reinvigorating both profound pro-activeness on personal and collective awareness and action in protecting the climate, the "DNA" and "health" of climate, and environment, in short-medium and long-term trajectories[278]. It underpins the key triad of efficiency, fairness and sustainability.

-The Principle of Interdisciplinary on Climate Change Science(s)

This underpins the fundamental interdependency and interconnectedness particularly between Climate, climate sciences, natural sciences and social sciences in the collaborative quest in preserving climate and environment locally and globally[279]. Hence, avoiding the "cancers" of departmentalism and "myopism" as a whole.

-The Precautionary Principle on Climate Disasters

This principle underscores and demands personal and collective consciousness and mindful stance for climate justice, action and regimes and goods for thousands and thousands of years to come.

-The Principle of Human Capital and Fitness in Climate Action

It strongly emphasizes particularly on the urgent need for rigorous human capacity building in, for and with higher education in Africa

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[277] Ibid., p. 675-676.

[278] Ibid., p. 676

[279] Aidan G. Msafiri "Good Governance and Sustainable Management of Natural Resources", in KAS-Journal Volume II, March 2013 p. 45.

today[280]. Among others, these include transformative core skills, competences, visions, aptitudes for climate resilience and sustainability.

-The Principle of AGAPE (Golden Rule) in Climate Action

This is embodied in all great religions as the most fundamental solution for climate action and accountability among all people worldwide (as expressed in Mt. 22:37-39). This includes fundamental rights of all humans such as shelter, food, hygiene, education etc. On one hand, but also those of plants (soil flora) and animals (soil fauna) as a whole. Hence, promoting the fundamental ethical norms and values of dignity, preservation of life, trust, partnership, integrity, sustainability, inclusivity and solidarity both vertically and horizontally.

-The Principle of Deep Change and The Middle Path for Climate Action

It addresses climate challenges and issues today in more qualitative and plausible trajectories. Admittedly, a deep change model complements mere arithmetic, geometric and calculus-based models and solutions. These are complementary. In this regard, therefore Jeffrey D. Sachs (2011:162) strongly comments that the "essential teaching of both Buddha and Aristotle is the path of moderation pursued through life-long diligence, training and reflection. It is easy to become addicted to hyper consumerism, the search for sensory pleasures and the indulgence of self-interest, leading to a brief but long-term unhappiness…"[281] This principle, emphasizes motivation for higher and nobler goals as a whole.

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[280] Aidan G. Msafiri, Ibid., p. 48.

[281] Jeffrey D. Sachs, "The Price of Civilization: Economics and Ethics After The Fall." London, The Bodley Head, 2011, p.162.

Justice-Based Excellence and Comprehensive Model

First, justice necessarily calls for a new and vibrant culture of capacity for climate action-based knowledge, skills and aptitudes[282].

Second, comprehensive justice on issues pertaining to climate action demands fair participation of all peoples, stakeholders and players in society starting from the Bottom of the Pyramid (BOP).

Third, justice in and for climate entails collective affirmation and protection of climate justice. Among others, these include due respect and protection of environmental rights, human rights, the right for development, the rights for gender equity and equality, right for transformative power of climate sustainability and the right for effective action for global climate partnerships.

Fourth, true justice in and for climate resources demands transparent and democratic procedures, systems and strategies among all stakeholders e.g local communities, NGO's, government, academia, businesses, etc.

Fifth, integral justice demands not only fair and equal distribution of ecological benefits and resources, but also due punishment to individuals, businesses, institutions, governments, companies involved directly or indirectly on eco-destruction, loss of biodiversity and resources.

Last, but not least, comprehensive justice on issues of respect particularly for the rights of future generations (humans and non-humans) for ecological fitness, wellbeing and happiness for millions of years to come.

Policy-Based Excellence and Key Tenets

First, there is a new synergetic policy-based and interdisciplinary approach especially among higher education in underpinning

[282] Aidan G. Msafiri, "Good Governance and Sustainable Management of Natural Resources in KAS Journal pp. 48-50 passim.

particularly the East African Climate Policy of 2011 section 3.1.3.3 with the rest of the policies.[283] This section underscores the key nexus with the East African Community Framework with other multi-sectoral policies including water resource, coastal and marine environment, forestry, wildlife management, agriculture and food security, human health, tourism, energy, infrastructure, land use, human settlements, fisheries, livestock and industry.

Second, since 2015 in particular, there is a substantially increased focus and emphasis in Tanzania in aligning climate change and climate action with national priorities. It is affirmed that "both mitigation of greenhouse gases and adaption to climate change are addressed in policy documents… The focal point for change is the Division of Environment in Vice President's Office (VPO), which is a prominent ministry reporting directly to the Vice President. The VPO coordinates climate policy and handles Tanzania's international climate engagement, including responsibility for the formulation and implementation of the Nationally Determined Contribution (NDC)."[284]

Briefly, from a higher education perspective this policy focuses more in particular pillars:

1) The more to adopt a narrative of "green growth", "Cradle-to-Cradle growth" as a more effective, resilient and efficient way towards climate action at all educational and sectorial levels.
2) Tanzania's higher education needs more interdisciplinary and inter-sectorial approaches, especially in addressing climate

[283] Konrad Adenauer Stiftung (KAS) The Challenges of Climate Change Adaption and The Potential of Sustainable Energies in The East African Community (EAC) After COP 19 Dar es Salaam, KAS 2014 pp.44-45.

[284] Grantham Research Institute on Climate Change and The Environmental Centre for Climate Change Economies and Policy, Policy Briefs by Michal Nachmany, October 2018 p. 3-4.

change challenges at different workshops, symposia, conferences etc.

3) A growing sense of putting greater and unique importance at the local levels (Bottom of the Pyramid) than ever before.
4) Fourth, recent (2021) observation among high education institutes portrays a powerful propensity especially emphasizing on the accessibility[285] to and the use of transformative climate action research gaps, challenges and opportunities as a whole.
5) Last, there is a remarkable emphasis particularly in the post COP 21 in 2015 in Paris on eco-jurisprudence in higher education than ever before. This new trend is characterized among others especially by the new principles of "Common But Differentiated Responsibility" (CBDR),[286] the principle of "Nationality Determined Contributions" (NDC), Environmental Law Regimes, Customary International Law and Climate Action.

Technical-Based Excellence

First, from a research viewpoint, the Institute of Rural Development Planning (IRDP) in Dodoma Tanzania demonstrates a profound multidisciplinary model and expertise in for climate action and sustainability. These covers particularly research, publications, consultancy services especially in the areas of sustainable agriculture, environment, livestock, food security, governance to mention a few. Currently, IRDP is leading an eco-village adaption modal project in responding to climate change challenges in central Tanzania sponsored by the European Union (EU).[287] The primary objective of this vibrant endeavour is to improve "resilience to climate change among rural

[285] Ibid., pp. 7-8.

[286] Aidan G. Msafiri in Konrad Adenauer Stiftung, Supporting the Rule of Law in Africa "Climate Change and Law", Nairobi, KAS 2017 PP.110-112 passim.

[287] https://www.irdp.ac.tz/research/about_department searched in April 22, 2021

households of Chamwino District and Dodoma City Council, Chamwino District Council, Hombolo Agricultural Research Centre, Dodoma Environmental Network (DONEI), Maji na Maendeleo Dododma (MAMODO), and Tanzania Organic Agriculture Movement (TOAM)"[288]

Second, in recent years diverse agreements, contracts, and partnerships have been made particularly between the government of Tanzania, the academia, NGO's, Civil Societies, and ministries, with Norway for Climate action, environmental protection, and sustainability. Among others, these include the National Carbon Monitoring Centre at the Sokoine University of Agriculture, REDD fund to increase the capacity of the Forest Training Institute in Olmotonyi Arusha, VPO REDD+ Readiness Support, Conservation and restoration of the Easter Arc Mountain project (CREAN), and the Agricultural Council of Tanzania, just to cite a few.[289]

Last, but not the least, from a technical perspective, in the Nelson Mandela, University of Science and Technology in Arusha, Tanzania, substantial efforts have recently been made especially on climate action related projects with very promising and measurable contributions. Among others, these include:

1) The Water Infrastructure and Sustainable Energy Futures (WISE FUTURES).
2) The Evaluation Project of Suitability of Water hyacinth from Lake Victoria as a feedstock for Biofuel Production.
3) BIOINNOVATE Project for agro/biowaste conversion in Eastern Africa.
4) The Solar-assisted Heat Pump Drying Technology for Tanzania's Industrial and Agricultural use.

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[288] Ibid.

[289] www.norway.no/tanzania searched or the April 22, 2021

5) The Social Science of Climate Change Adaptation in advancing Academic writing for young academicians in Tanzania.[290] These are some *best practice* endeavours underpinning the role and contribution of Tanzania's academia to SDG 13 in particular and SDGs in general: the Centre for Climate Change Studies in Dar es Salaam, the College of African Wildlife Management (MWEKA), a very vibrant and fast-growing climate-related training and research centre of excellence in developing models for climate change mitigation, adaptation, strategies, consultancies and climate action and eco-management projects in Tanzania, just to allude to the key best practices in Tanzania's academia as a whole.

An Afro-Based Holistic Model and Its Excellence

First, as we (2016:29) underpinned in another publication, this integral model, particularly through Afro-centric eco- and climate-based life news, shows God ("Ruwa") as creator and "*Homo Africanus*" as responsible co-creators, stewards and protectors of the created world including all climate related resources; land, atmospheres, minerals, air, soil flora (plants), and soil fauna animals.[291]

Second, unlike the Euro-American, North Atlantic quantitative, and mathematically based approaches which are profoundly dualistic, atomistic and individualistic models, the Afro-centric model is necessarily and essentially qualitative all-encompassing and life enhancing. Briefly, it systematically incorporates a "plethora of life promoting values, views and traditions. It underpins the inclusive African spiritual, anthropological and cosmological altruism of '*I am*

[290] www.nm.aist.ac.tz searched on the 22nd April, 2021.

[291] Aidan G. Msafiri, Globalisation of Concern III: Essays on Climate Justice, Education, Sustainability and Technology, Geneva, Globethics.net Focus No. 32 p.29.

because we are' as advocated by John S. Mbiti: According to Mbiti, land or nature in the broadest sense of the word is not an empty impersonal object or phenomenon, it is filled with religious significance. To African people, a religious universe is not an academic proposition, it is an empirical experience, which reaches the height in acts of worship."[292] In the same vein of thought, our recent Book "Globalization of Concern IV: How Relevant and Timely Is 'Laudato Si' For Africa" (2019:1-101) profoundly unleashes the Afro-centric climate change framework and model based on the dynamics of interconnectedness, interdisciplinarity and interdependence both horizontally and vertically.[293]

Some Gaps and Disconnects

Curricula and Pedagogical Gaps

First, it has been observed that there is a critical lack of adequate, relevant, practical and action-oriented curricula systems on climate action in higher education. Unfortunately, climate-action based knowledge is at times simply considered as mere intellectual luxury or an essay pathway to acquire good credits only.[294]

Second, there is an ever-growing negative trend particularly among scholars in Africa's higher education to consider climate action, education and skills as a certain cadre of experts and climate "gurus". Majority at the Bottom of the Pyramid are simply left aside. This attitude and practice discourage interdisciplinary and interdepartmental

[292] John S. Mbiti African Religious and Philosophy, New York: Doubleday, 1970 pp. 73-74.

[293] Aidan G. Msafiri, Globalization of Concern: How Relevant and Timely Is "Laudato Si" For Africa Wienerwald, Be & Be 2019 pp.1-101 passim.

[294] Aidan G. Msafiri, Globalization of Concern II, (Geneva: Globethics.net No. 8) p. 41.

approaches and methodologies in responding adequately to climate challenges. Hence, giving rise to unhealthy departmentalism and compartmentalization of climate knowledge both in terms of content and method.[295]

Commercialisation and Commodification of Climate Related Institutions

First, some universities and higher institutions dealing with climate issues locally as well as globally have been putting more interest and focus on financial profitability than on result-based climate action and sustainability.

Second, in many cases, most of climate change and climate action symposia, for conferences simply take place among high education scholars and academic gurus and in luxurious hotels, beaches, resorts, halls far away from the millions of climate victims at the Bottom of the Pyramid.

Ideological-Philosophical Gaps

First, there are four radical or extremist philosophical and ideological world views as well as life views on climate and environment. This is made of the following four models: -

The extreme anthropocentric life view which considers the human person as the centre of everything, the biocentric life view which considers the life of plants and animals only as essential, the cosmocentric life view which underpins only right of the physical world at the expense of humans and other life forms. Last, the pathocentric life view which exaggerates the rights and roles of animals at the expense of those of humans, plants as well as those of creation.[296]

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[295] Ibid., Aidan G. Msafiri p.41.

[296] Aidan G. Msafiri in Oliver Ruppel and Christian Roschmann Vol. I pp. 669-670.

Jurisprudential and Policy Gaps

First, these are embedded in the metaphorical models which fail in responding to climate justice and action. The 'Greedy Jackal' climate action and Sustainability Policy Model, the 'Ignorant Ostrich' climate action model, the 'Business as Usual' climate action model, the 'Busy Bee' climate action model, the 'Chameleon' climate action model.[297]

Second, there is a remarkably huge gap and lack of coherence and continuity particularly in the institutional, national (Tanzania's) and regional climate change strategies and policies. Furthermore, from a gender perspective, observation indicates that many climate action-based policies do not adequately address gender related issues for gender equality, inclusivity and equity. Hence, making a larger percentage of women to become climate change victims, and refugees.

Third, there is a remarkable widespread lack of core and necessary knowledge, skills, competencies and motivation in and among Africa's high education particularly on the Principle of Common But Differentiated Responsibility (CBDR), Climate justice, REDD+, CDM just to mention a few. Practically, it is not "surprising" to daily observe high educated personnel, professionals, staff, students, academia craving for big cars, buying plastic materials, consuming more meat than vegetables, using several smart phones, iPad, tablets, etc. Indeed, both on the institutional and national levels, there are some existing organizational incapacities, inefficiencies as well as outdated climate change by-laws, laws and policies which directly or indirectly exacerbate greater eco-and climate related stress on the planet for thousands of years to come.

[297] Aidan G. Msafiri in KAS "Supporting the Rule of Law in Africa" p. 111.

Negative Effects of the High-Speed Mania Among High Education

First, we highlight our (2013:673) remarks on the current post-modern trend for high-speed culture with its devastating consequences on climate and environment among high education in particular. Speed "is considered a virtue, slowness a vice. This 'high-speed' culture translates not only into more energy and non-renewable resources consumed, but also into more greenhouse gas emissions from vehicles, industry, aeroplanes, etc…"[298]

Second, Philip Vinod Peacock cites Jeremy Geedom re-affirming that the car for instance "is emblematic of the human enterprise that is killing off so many spicies today. Many scientists are saying that biological diversity is declining at a dangerous rate. Meanwhile the artificial diversity of machines explodes as we humans repopulate with creatures of our own invention."[299]

Briefly, all these gaps ("*lacunae*"), discrepancies, limitations or disconnects elucidate systemic and weaknesses particularly inherent in the current high education edifice on climate change in Tanzania and Africa in particular. Let us now try to specifically portray the college of African Wildlife, Mweka, where I lecture as the best practice trainer in Wildlife and Eco-tourism in Africa. Hence, contributing immensely to climate action (SDG 13) and sustainable communities as a whole.

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[298] Aidan G. Msafiri, In Oliver Ruppel p. 673.

[299] Philip V. Peacock, Challenging the Idols of Speed, in World Common of Reformed Churches (Geneva, 2011)

The Mweka College and its Contribution to SDG 13: Best Practice

Curricular Excellence

First, Mweka, as the leading institution in competence-based professional and technical training in wildlife and Tourism Management, substantially contributes to SDG 13. This is encapsulated through its vision to specifically become a centre of excellence for professional and technical training in addressing the challenges of wildlife sustainability and biodiversity conservation in Africa. Its mission is to provide "the highest standards of technical training by engaging the global community and academia in undertaking research and consultancies in order to meet the needs of wildlife and tourism management in Africa."[300]

Second, the college of African Wildlife Management Mweka offers modules on Management, Habitat Management, and Project Planning. Among others, the fundamental objectives or tasks of these modules is particularly to access National Climate Policies in Conservation, international organizations efforts in climate change mitigation, and renewable energies, to mention but a few key trajectories.



[College of African Wildlife Management, Mweka Since 1963] (Source: www.mwekawildlife.ac.tz)

[300] Cfr - College of African Wildlife Management Brochure under the vision and mission statements April 2021.

Programs Excellence

Competence-based Climate action modules are offered both at Diploma and Bachelor Degree levels in Wildlife Management programs. These are:

1) Postgraduate Diploma in Wildlife Management
2) Postgraduate Diploma in Tourism Planning and Management
3) Bachelor Degree in Wildlife Tourism (NTA 7&8)
4) Ordinary Diploma in Wildlife Management (NTA 6)
5) Ordinary Diploma in Wildlife Tourism (NTA 6)
6) Technician Certificate in Wildlife Management (NTA 5)
7) Technician Certificate in Wildlife Tourism (NTA 5)
8) Basic Technician Certificate in Wildlife Tourism (NTA 4)
9) Basic Technician Certificate in Wildlife Tourism (NTA 4)

Some Short Courses Offered by the College: -

1) Tour Guiding and Interpretation
2) Snake Capturing, Handling and Translocation
3) Professional Walking Safari
4) Applied Fire Arms
5) GIS for Conservation
6) Wildlife Inventory and Monitoring for Wildlife Management Areas
7) Natural Resource Entrepreneurship
8) Ecological Monitoring in Protected Areas
9) Natural Resource Policies and Procedures for Community based Protected Areas
10) Conservation Action Planning and Finance Reporting
11) Destination Management
12) Monitoring and Evaluation for Wildlife Management Areas
13) Cultural Tourism Promotion and Management
14) Principles of Protected Areas Planning

15) Plants Identification and Herbarium Techniques
16) Birds Identification and Interpretation
17) Governance in the Management of Natural Resources

Research and Technical Excellence

First, rigorous and relevant climate action and biodiversity and eco-management related researches is the "heartbeat" of the College Research Agenda. Currently (2021) one of the best practices there is the ongoing collaborative research work on climate change perceptions and adaptations in Tanzania.

Second, the Kwakuchinja Wildlife Corridor (KWC) is a classical research best practice and panacea particularly in re-assessing the well-being and movement of wildlife and sustainable of biodiversity around Tarangire and Lake Manyara National Parks in Tanzania. This is done through the use of the open source "Google Earth Engine and QGIS software. Results show that agriculture increased by 35.6% and woodland decreased by 67.4% in the KWC study area in the period between 2002 and 2017."[301]

Third, among recent research publications linked to climate action, these two are worthy a mention:

1) "Climate Controls of decomposition drive the global biogeography of forest-trees symbioses" – published in Nature by Steidinger, Martin et al.
2) "Climate Land-Use-Interactions shape Tropical Mountain Biodiversity and Eco-system Functions" published in Nature by Dulle et al.

[301] Cfr. College of African Wildlife Management CAWN, Mweka, Research Abstracts 2019/2020 p. 9



(Source: www.mwekawildlife.ac.tz)

Publications' Excellence

Admittedly, the College of African Wildlife Management, Mweka, has immensely demonstrated its unique contribution to climate action through its wide array of well-researched quality and relevant publications. This is rigorously being done collaboratively both with college staff, students and extramural experts and researches nationally and internationally. In the period of 2019 to 2020, for instance, 26 high-quality publications related to biodiversity and climate change challenges have been published. Among others, the following contributions[302] need special mention and attention as a whole: -

1) "The coverage of Biodiversity Conservation Issues in Local Newspapers and The Role of Enhancing Conservation

[302] Ibid., pp. 3-32. For more information on publications see www.mwekawildlife.ac.tz under research and publications

Awareness. An Analysis of Two News Outlets." (Jafari R. Kideghesho et alii).

2) "Spatiotemporal changes In Wildlife Habitat Quality in The Greater Serengeti Ecosystem": (Jafari R. Kideghesho et alii).
3) "Climate Controls of Decomposition Drive the Global Biogeography of Forest-Tree Symbioses" (Emmanuel Martin et alii).
4) "Ecosystem Services and Importance of Common Tree Species in Coffee-Agro Forestry Systems: Local Knowledge of Small-Scale Farmers at Mt. Kilimanjaro, Tanzania." (Rudolf Mremi et alii).
5) "The Importance of Nutrient Hotspots Using Camera Traps, Indirect Observation and Stable Isotopes in A Miombo Ecosystem, Tanzania" (Gabriel Mayengo at alii)
6) "Land Use and Land Cover Change Within and Around the Greater Serengeti Ecosystem, Tanzania." (Jafari R. Kideghesho et alii)
7) "Climate-Land-Use Interactions Shape Tropical Mountain Biodiversity and Eco-system Functions" (Hamadi

Community Outreach and Relevance

First, the college has introduced a climate action-based Bee Pollinator Project among neighbouring schools and communities.[303] Among other schools, these include Cyril Chami, Maria Gorreti, Nsoo and Kibosho Girls secondary schools. This contributes remarkably to conservation of biodiversity, economic remuneration and education for climate awareness and action.

Second, from the national perspective, Mweka College has been very active in tree planting national events as well as the promotor of

[303] Interview with Dr. Emmanuel Martin 16th March, 2021.

education on climate change and its challenges[304], and biodiversity conservation at the grass roots level through various radio stations, including Moshi FM, TBC1, Kili FM, Uhai TV, Safari Channel, to mention a few.

Partnership Excellence and Potentials

First, as the unique and preferred college in biodiversity conservation in Africa, the College of African Wildlife Management, Mweka, has established both national and international partnerships.

Admittedly, these academic and research-based synergies are very beneficial particularly in endowing the college's staff, students and graduates with global climate action, vision and passion particularly on biodiversity professionalism and competence. Among others, this includes partnership with the University of Florence, the University of Freiburg, the University of Manchester, and the University of Milan.

Second, the Mweka College enjoys high reputation, recognition and preference particularly among Tanzania's National Parks and Mountain Forests' Conservation Organizations in Tanzania.

Conclusion

The unique sustainability function of high education on climate action as epitomized in SDG 13 (in particular in and for Africa), cannot be over emphasized. Indeed, this is not a mere academic understatement, but an existential life and death altruism and crucial undertaking. Consequently, at this juncture, few but key remarks need special attention and mention in particular.

First, the triadal classical functions of high education as engines of knowledge, research and community service entail and absolutely timely trajectory of climate-based action, strategies and sustainability activities.

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[304] Ibid., Interview with Dr. Emmanuel Martin on the 16th March, 2021.

This dimension is key particularly in effectively responding to the ever - growing climate related challenges and disasters locally and globally. Higher education, particularly in Africa, needs to prioritize this as key players and agents of a new decarbonization *Avantgarde,* as the African continent remains to be the most affected continent with climate change disasters.

Second, it must be well understood that there is an intrinsic nexus between SDG 13 and the rest of the 16 SDG's and vice versa. Admittedly, all of them are interdependent and interrelated. Consequently, the need for higher education to adopt a multi-disciplinary approach to and among the 17 SDG's.

Third, more than ever before, there is notably growing positive response and contribution in and among higher education in Africa towards climate action education, practical response, conservation of biodiversity, policies and sustainable life styles. Nonetheless, these success stories have been paralleled with certain disconnects and gaps. Truly, the context might be different but the very logic is credible and timeless for thousands of generations to come.

Fourth, from a practical and technical perspective, our collaborative endeavours and synergies towards real climate action in by and through Africa's necessarily demand implementation of climate action, energy, efficiency, strategies and policies, curriculum overview, knowledge, dialogue exchange, and capacity building. In short, cost-effective and cost-efficient energy solutions. These need to be inculcated by and supported by high education while building a vibrant community engagement in collaboration with all key stakeholders as a whole.

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SOCIETAL INFRASTRUCTURES AND COLLABORATION

11

ARCHITECTURE STUDIOS FOR SUSTAINABLE CITIES AND COMMUNITIES: A RADICALLY INCLUSIVE PERSPECTIVE

A Response to SDG 11: Sustainable Cities and Communities

Hermie Elizabeth Delport, Jolanda Morkel, Michele Gorman, Lindy Osborne Burton

Keywords

Architectural design studio; inclusivity; integrated learning.

Abstract

"*Sustainability is not just about energy efficiency, but rather a complex and overarching multidisciplinary field that requires appropriate expertise, as well as a moral obligation and an opportunity for inspired architecture.*" (Almonte, 2012, 17)

Cities are collectives of buildings that "are complex socio-technical entities, embedded in a social–cultural–economic–climatic context" (Passe 2020: 566). The design and development of cities and hence the quality of lives of resident communities are directly impacted by the practices of the architectural profession.

Our aim with this chapter is to explore the Sustainable Development Goals (SDGs) within architectural education with specific attention given to the architectural studio. Although there have been many actions taken and attempts made to include sustainability in architectural curricula and guidelines provided for the inclusion of the SDGs there is limited research that provides a perspective of sustainability in architectural schools globally.

Our perspective is from the position of the Radically Inclusive Studio (Gorman et al. 2021) which we conceptualise as part of the cities and communities and ultimately the world that we live in. The Radically Inclusive Studio is not an isolated space, but forms part of an ecosystem, defined as "a system of people, content, technology, culture, and strategy, existing both within and outside… which has an impact on both… formal and informal learning" (Eudy, 2018, 3), in which it supports and is simultaneously supported.

We present the Radically Inclusive Studio and its structuring 6S Conceptual Framework of Inclusive Contexts (Gorman et al. in-press) as a theoretical framework for conceptually (re)organising the SDGs and for exploring the Radically Inclusive Studio principles that could serve as guidelines for sustainable development in architectural and other education. We use an integrative literature review to investigate articles, books, and other published texts with the "aim to assess, critique, and synthesize the literature... in a way that enables new theoretical frameworks and perspectives to emerge" (Snyder, 2019, 335). We include sustainable architectural solutions from both practice and education to present an overview of how architectural projects address the SDGs. As authors we present aspects of our own work and we propose that the pedagogic principles of the Radically Inclusive Studio could serve as a guideline for sustainable development education. *

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Introduction

In this chapter, we investigate how the Sustainable Development Goals (SDGs), and specifically SDG11, are addressed and integrated in and enacted through the architectural profession and in architectural education. Our aim is to explore how the pedagogy and practice of an architectural studio that is radically inclusive could foreground the SDGs and how the principles of such a radically inclusive architectural studio could be adopted and be of benefit to other disciplines as a foundational pedagogy.

As authors, our perspective is through our collective lens as architects, architectural educators, ecofeminists, and researchers with a specific focus on the architectural studio as a space of learning, a space where "the functional and the structural, the social and the technical (are) successfully blended" (Kuhn 2001, 349). We concur that "there is an infinitely ethical dimension to every aspect of architecture" (Ameri & Dagg 2018, n.p.). We are motivated by our shared values and we accept

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our situated approach to knowledge and that our "reality (is) necessarily from a specific angle" (Reiter, B. 2017, 132).

We conceptualise the Radically Inclusive Studio (Gorman et al. 2021) as an ecosystem of the cities and communities and ultimately the world that we live in. The Radically Inclusive Studio is not an isolated space, but forms part of an ecosystem, defined as "a system of people, content, technology, culture, and strategy, existing both within and outside … which has an impact on both … formal and informal learning" (Eudy 2018, 3), in which it supports and is simultaneously supported.

> Architects can provide basic ideas and proposals for regulations that make it possible for us to have sustainable cities and communities in the future. (Mossin et al. 2020a, 7)

Architects are involved in the design of the buildings in cities and towns but many resource-poor areas are developing without access to formal design input, their occupants excluded from economic opportunities and professional services. Aspiring to achieve a more sustainable world includes a striving for inclusion, decarbonisation, and environmental justice which we acknowledge as "at its core, an anti-colonial struggle" (Upadhva 2014, 1).

Buildings, cities, and towns create places and spaces which house communities and which determine the quality of life, including the well-being and health of those communities. This quality of life is hugely impacted by the design and development of these places and spaces as "the built environment affects the people who use it in a variety of ways including psychologically, socially and physiologically" (Bardage 2017, 335).

The built environment is a substantial user of energy and a major contributor to environmental pollution (Yao et al. 2020, 2). The life-cycle and ecosystem of the structure and infrastructure of buildings and

cities involve the conceptual design and development, the sourcing, and manufacturing of construction materials, the construction processes, the energies and the resources used before and during occupation, and the eventual demolition or demise of the buildings and cities. These life-cycle stages have a broad and very definite environmental impact (Siddiqi et al., 2002).

How are architects currently contributing to the design and development of buildings and cities in response to the objectives of the SDGs? To a large extent, the architectural profession takes sustainability quite seriously and professional institutions and collectives are instrumental in calling their constituents to action. There are a wealth of examples of buildings and cities that are aligned to the advancement of the SDGs (Mossin et al., 2020b). In a survey by the Royal Institute of British Architects (RIBA 2018) which gathered the views of architects on who is "leading the way" on the SDGs, 59% of the respondents said it was the "design consultants, such as architects", 14% of the respondents said it was clients, and 3% said it was the contractors (RIBA 2018, 20). Does this imply that the leading role of architects demands that they display greater both insight and motivation to address the SDGs and consequently have an important responsibility to bring across the message of the SDGs to their clients, contractors, and the public at large?

Unfortunately it cannot be automatically assumed that all architects aim to address the SDGs in the design and development of buildings and cities, the Architects Climate Action Network explains that:

> "The manner in which we produce, operate and renew our built environment continues to curtail biodiversity, pollute ecosystems and encourage unsustainable lifestyles. This state of emergency calls for a new kind of professionalism. We can no longer remain secluded within our personal and professional silos. Instead we

> are harnessing our collective agency; as citizens with a shared professional background and a common goal, mobilising to bring about necessary changes to our industry." (Architects! Climate Action Network, 2020, n.p.)

Another reality is that not all buildings and cities are influenced or designed by architects or other built environment professionals. Many of the largest cities on earth expand organically through intervention by their citizens who are building informal structures in the absence of formal supporting infrastructure, often without access to basics such as running water and sanitation. The exclusion of these communities from the formalised processes of the professional world, raises the question: Where are the architecture and built environment services for "the other 99%" (Fisher, 2012).

Architectural education similarly to professional practice reaches only a minority of the world's population. Architectural studies are complicated, lengthy, and expensive. Traditionally, students from marginalised or poorer communities would not be sufficiently prepared through schooling in the first place. If they are selected they would most likely drop out early in their studies because they typically lack the required cultural and design capital which students from more affluent communities would have. Although this exclusionary situation might have improved in the past decade or so, there is still room to move towards radical inclusivity, which is part of what we address in the conceptualisation of the Radically Inclusive Studio (Gorman et al., 2021). The Radically Inclusive Studio ultimately asks how architectural education considers the other 99%.

We agree with Cerulli (in RIBA 2020, 29) that we need to "*focus on creating a shift ... towards a more integrated view of sustainability that looks holistically at the environment, including society, and challenges established professional norms and praxes*" in our quest to reach the SDGs. This focus includes Goal 11 which addresses sustainable cities

and communities and which aim is to "*make cities inclusive, safe, resilient and sustainable"* and to address *"inequality ... unrest ... insecurity ... health ... productivity ...economy ... and ... quality of life*" (United Nations, n.d., 1, 2).

We also concur with Altomonte et al. (2012) that we should be working towards a curriculum "*that fully endorses and promotes the ethical values of sustainability, and motivates students towards responsible practices (*and that has*) sustainability literacy as a 'core competence*'" (2012, 24, 20) and we agree with Antonini et al. (2021) that we require "*the capacity to generate a visionary and forefront design approach in the young generation, with an aim to stimulate their reaction attitude rather than providing consolidated tools from past conditions that no longer exist or will rapidly evolve*" (2021, 2).

Our aim with this chapter is to explore the Sustainable Development Goals (SDGs) within architectural education with specific attention given to the architectural studio. Although there have been many actions taken and attempts made to include sustainability in architectural curricula and guidelines provided for the inclusion of the SDGs there is limited research that provides a perspective of sustainability in architectural schools globally.

We present the Radically Inclusive Studio and its structuring 6S Conceptual Framework of Inclusive Contexts (Gorman et al., in-press) as a theoretical framework for conceptually (re)organising the SDGs and for exploring the Radically Inclusive Studio principles that could serve as guidelines for sustainable development in architectural and other education. We specifically ask how the principles of a Radically Inclusive Studio may enhance or aid the adoption of the SDGs by architectural students as future practitioners, and also how these principles could be transferred to other disciplines. Of equal importance in this conversation is the impact that the concept of a Radically

Inclusive Studio may have on the communities and cities within which such a studio conceptualises and executes its practices and projects. Does a Radically Inclusive Studio have the potential to reach beyond architectural education and the architectural profession to bring the process, practice, and ethics of a sustainable (built) environment to these communities and cities? Can a Radically Inclusive Studio contribute to that which "defines architecture as an agent of empowerment, self-development and civic rights"? (Cité Architecture & Patrimoine, n.d., n.p.).

In order to structure the chapter and guide the conversation and exploration we present perspectives from the literature on the ethical position of architecture, a synopsis of the alignment of SDGs with architectural practice and architectural education, and an overview of the pedagogy of the architectural studio. We then introduce the Radically Inclusive Studio and the 6S Conceptual Framework of Inclusive Contexts (Gorman et al. in-press) and proceed to use the 6S Conceptual Framework of Inclusive Contexts as a theoretical framework for conceptually (re)organising the SDGs and for presenting sustainable architectural solutions from practice and education to give an overview of the incorporation of the SDGs in architectural practice and projects through an integrative literature review investigating articles, books, and other published texts with the 'aim to assess, critique, and synthesize the literature... in a way that enables new theoretical frameworks and perspectives to emerge' (Snyder, 2019, 335). Included are some of our own work.

We acknowledge that the Radically Inclusive Studio is still under development and that the exploration within this chapter is also partially an exploration of how the Radically Inclusive Studio itself has been shaped by the practices of the authors prior to the conceptualisation of the Radically Inclusive Studio. We are from different parts of the world and have been involved in different schools of architecture over the past

two decades. We are all involved with the ongoing development of the architectural curriculum with a focus on inclusivity and sustainability and our purpose is to develop the Radically Inclusive Studio through our collective research.

The Ethics of Architecture

> *"In its material, cultural, and economic effects, architecture poses essential and unavoidable ethical quandaries and challenges. In its performative capacity to express ideology, architecture is inexorably entangled in questions of power and legitimation. As part of an interconnected global economic infrastructure that consumes natural resources at an alarming rate, architecture raises new and pressing questions with which educators, practitioners, and students must engage."* (Ameri & Dagg, 2018, n.p.)

Decisions are made during the design and development of buildings have a far-reaching impact on the environment, the economy, and society. Architects are part of those decisions and have therefore an ethical responsibility to understand the implications of the decision they make. In effect a building can serve "as a form of expression of ethical attitudes" (Daugelaite & Grazuleviciute-Vileniske, 2021, 1). A high-rise building in a city does not only impact that city. This high-rise building also impacts the global environment and to climate change. This change is "felt by everyone, but the poorest people in the world will be the least able to adapt" (Wendt 2009:5). The responsibility of the architect's decisions is therefore not confined to the immediate context of the building.

Professional and voluntary bodies for architects and architectural practitioners have codes of conduct or codes of ethics which outline the

responsibilities of the architectural professional. These codes address responsibility and respect towards the natural environment, the conservation of natural resources, quality of life, some reference human rights and social justice, ecologically sustainable, and energy efficient design and development (South African Institute of Architecture, 2010; Australian Institute of Architects 2017; American Institute of Architects, 2020).

Architect Craig Wilkins explains that architects need to understand where their responsibility lies and know that the practice of architecture is not a right, but a privilege "given to you by the society in which you live …there is a social contract". He continues to explain that the foremost duty of a licensed or professionally registered architect (the term varies according to the country) is "to protect the health, safety and welfare of the public" (Novara, 2021, 6). Architect Benjamin Dockter (2011, n.p.) proposed an oath which requires the architect to acknowledge that "every element of architecture is connected to the world as a whole", that there is a responsibility to "preserve and help regenerate the environment, both natural and built", and that in practice the architect will not waste materials but rather reuse and recycle with an emphasis on quality materials and craftsmanship and with dedication to "make the world a better place to live in".

In the context of the Radically Inclusive Studio we believe that professional architects are legally obligated to do no harm. To this end architects should integrate the three core concepts of sustainable development: economic, social, and environmental in the making of all decisions, should by default consider the intersection and integration of the 17 SDGs, and take responsibility to educate clients and the public at large.

The SDGs and Architectural Practice

Globally, the architectural profession has made extensive efforts to introduce awareness and actionable processes and methods towards achieving the SDGs. In this section we review the efforts made by key professional bodies, collectives, and voluntary associations who are providing guidelines and directives to their professional and educational members. The sustainable contribution of architects are recognised by the global architectural community in numerous awards such as the Pritzker Architecture Prize and the Global Award for Sustainable Architecture. Some examples of such recognitions are given below.

The Union of International Architects (UIA) established the UIA Commission on the UN SDGs to answer "directly to the SDGs (and to) ... be influential in raising awareness, creating knowledge, facilitating communication and disseminating information across its global network of members" (UIA, 2018, 4). Through this UIA Commission two guides were published which present examples of good architectural practice for each of the 17 SDGs and, amongst other objectives, "is dedicated to the architecture students who will shape the future of architecture" (Mossin et al., 2020a, 8). The UIA also awards outstanding architectural work. In 2021, the prizes which aligned with the SDGs were the Robert Matthew Prize for Sustainable and Humane Environments and the Vassilis Sgoutas Prize for Implemented Architecture Serving the Impoverished. Francis Kéré received the first in recognition for the "use of local building techniques and sensitivity to culture and community (which) are emblematic of a commitment to fundamental values and sustainable architecture on a human scale". There were three winners for the second namely, a couple, David Kaunitz and Ka Wai Yeung, Nadia Tromp, and Jiansong Lu who were respectively acknowledged for "their profound commitment to innovative design and sustainable construction, implemented with local participation", a "deep sense of social

commitment grounded in pragmatic and simple design solutions, which foster human dignity and community engagement", and a "pragmatic and elegant approach to modern architectural technology (that) has improved the quality of life for … an ethnic minority" (UIA 2021, n.p.).

The Royal Institute of British Architects (RIBA) signed the UN Global Compact in 2015. Through the RIBA Ethics and Sustainable Development Commission, founded in 2017, two reports were published, respectively in 2018 and in 2020, which focus on the SDGs and the application in the profession, including education. The 2018 report mentions the RIBA's "*unequivocal commitment to placing public interest, social purpose, ethical behaviour and sustainable development at the heart of the Institute's activities and to develop a plan of action based on the UN's 2030 SDGs"* (RIBA 2018, 4). One of the recommendations of the 2018 report was to "(e)*nsure that all teaching staff in validated schools of architecture have appropriate knowledge of ethics and sustainable development*" (RIBA 2018:14) and it was proposed that teaching staff receive assistance and training towards reaching this goal. The 2020 report asks how the SDGs can be "meaningfully supported ... from schools of architecture to specific projects to business strategy and leadership" (RIBA 2020, 5). The 2020 report also declared that "(n)ow, at the beginning of a Decade of Action for the SDGs, the RIBA is seeking to drive forward all 17 goals" (RIBA, 2020, 4). The RIBA confers annual Sustainability Awards as part of their Regional Awards. These awards recognise buildings which meet "the challenges of climate change, resource depletion, pollution, biodiversity decline and raising our collective understanding of the measures that must be taken to integrate sustainable solutions within the management and curation of our built environment" (Michelmersh 2021, n.p.).

The Architects Climate Action Network (ACAN) "is a network of individuals within architecture who are taking action to address climate

and ecological breakdown" (Future Architecture n.d.1). The ACAN operates on collaborative principles and aims to empower the public, the architectural profession, and architectural students with knowledge towards the SDGs. To this end, the Students! Climate Action Network (Architects! Climate Action Network 2020, n.p.) hosts dedicated events for architectural students. The ACAN has further developed an Education Toolkit and hosts Educators Workshops as part of their Climate Curriculum Campaign (Architects! Climate Action Network 2020). As ACAN member Mina Hasman puts it, "ACAN reminds official bodies of the impact of today's decisions on the much longer-term future" (Architects! Climate Action Network, n.p.).

The 2021 Pritzker Architecture Prize, the architectural community's most prestigious award which signals what the profession values, was endowed to Anne Lacaton and Jean-Philippe Vassal for their exceptional work in sustainable urban housing. Their approach is one of adaptive re-use in reaction to "the climatic and ecological emergencies of our time, as well as (the) social urgencies" (Pintos et al. 2021, n.p.) the world is facing. The Dezeen Awards for 2021 has numerous categories for sustainable buildings, too many to credit in this chapter. These awards include buildings such as the Jungle House (WTTJH) which is a typology for future sustainable carbon neutral living, the Kamikatsu Zero Waste Center by Hiroshi Nakamura & NAP which is built from waste and serves as a community centre for the reduction of waste, and the The Kendeda Building for Innovative Sustainable Design by The Miller Hull Partnership which focuses on environmental solutions through education, research, and community engagement (Dezeen Awards 2021). The Global Award for Sustainable Architecture, supported by UNESCO and the Cité de l'Architecture & du Patrimoine, takes into account architecture which portrays "durability, flexibility, economic, technical and ecological adequacy, cultural and social

acceptance (and aims to) fight… inequality, cultural disrespect and unreflected functionalism" (Cité Architecture & Patrimoine, n.d.).

A review of sustainability in architectural practice cannot be complete without referencing Architecture for Humanity. Architecture for Humanity was the seminal non-profit architectural programme and was founded in 1999 by Cameron Sinclair and Kate Stohr (Quirk, 2012, 2). As an organisation they worked predominantly in under-resourced communities, designing and building with the communities with a focus on sustainability in all its facets as part of the design solutions. Architecture for Humanity was dissolved in 2015 and transformed into the Open Architecture Collective (Open Architecture Collaborative, n.d.) who has a global footprint and focuses on inclusion and participatory design and provides architectural services to underserved communities whilst also educating and training local participants (Lau 2016:3). Architects contributing predominantly on a pro-bono basis to under-resourced and underserved communities is quite an established practice. Such work is referred to as public interest design, social architecture, public architecture, community architecture, participatory design or the new professionalism (Tovivich, 2009, Delport, 2016). Architects view these community projects as "rooted in ethical values" where one can do "more with less means (and) a lot of originality incorporating local design and vernacular building" (Melitonov in Fedderley, 2019, n.p.). The question begs why not all architectural projects are treated as rooted in ethical values and are searching for a means to do more with less?

These few examples from architectural practice demonstrate an emphasis on context or locality, community and socially relevant solutions for environmental and ecological sustainability, collaborative efforts, and integrative solutions. The acknowledgement and recognition of architectural interventions that display sustainable approaches and the application of the SDGs may aid the promotion and adoption of such

practices on a larger scale. These examples and awards embody values which architecture students can learn from and include in their own work.

The SDGs and Architectural Education

In architectural education there is widespread acknowledgement and awareness that all aspects of sustainability should be addressed in the architectural curriculum (Antonini et al., 2021). This section of the chapter aims to give a broad overview of the approach of architectural schools as a representation of the global position. Most architectural schools incorporate sustainability, and by extension the SDGs, as part of their curriculum. However, according to the Architects Climate Action Network architecture studios are not doing enough to address sustainability and that "knowledge now needs to be embedded within curriculums, educating on the environmental impact of architectural practice and the wider construction industry. We believe teaching around environmental design must be incorporated into every module, utterly normalising it and removing its specialist status" (Architects! Climate Action Network 2020, n.p.).

A 2012 study (Altomonte, 2012) which reviewed 70 architectural schools globally describes three models of sustainability integration in the architectural curriculum: as satellite structure, where sustainability resides outside the studio as theoretical standalone modules, as partially integrated structure where theory lectures are delivered outside of the studio with practical application in studio, and as fully integrated structure where sustainability is completely embedded in the studio and assessment is an integral part of studio projects. The study found that there is a great variance in application amongst schools. Further, many schools still have sustainable modules as optional, which implies that it might be "possible for students to choose different pedagogical paths

and therefore complete their degree without having comprehensively considered sustainable environmental design" (Altomonte, 2012, 12).

The RIBA Ethics and Sustainable Development Commission report of 2020 introduces various schools in the United Kingdom and their approaches to sustainability and by extension the SDGs. The London School of Architecture is an example of a school which includes the SDGs as "a formal reference" (RIBA 2020, 23). The London School of Architecture sees the SDGs as *"a blueprint to achieve a better and more sustainable future for all*" and value this blueprint above the philosophical positions of formally-based resolutions which often dominate architectural design solutions in the studio. The Welsh School of Architecture follows a fully integrated approach and has as its mission to "create a built environment that enhances people's lives, without destroying the planet for future generations" and aim to "optimise the delivery of a sustainable future, to be ethical, creative, curious and critical*"* (RIBA 2020, 25, 26).

The Architectural Association School of Architecture (the AA) focuses on few key areas of expertise to develop in students, including: environmental, theoretical, philosophical and ethical in an approach where sustainability is deeply embedded in the context and condition of studio projects. The School of Architecture at Sheffield Hallam University is a fairly new school of architecture which developed their curriculum and project approach explicitly with an integrated, holistic lens on sustainability and which supports an "environmental agenda, framed within wider social and political discourses" (RIBA 2020, 26).

These few examples are a fair representation of the global position of sustainable integration in architecture schools. The approach, process, and method varies, but one would have to search far to find an architectural school which does not address sustainability to some extent.

The Pedagogy of the Architectural Studio

The tradition and pedagogy of the architectural studio is quite specific to the discipline. In this section we aim to explain this pedagogy.

The architectural studio is the signature pedagogy of professional architectural education (Cuff, 1992; Brown, 2020). Compared to the traditional classroom, which is predominantly based on theory assessed through a test or exam as prove of knowledge gain, the architectural studio centres on the execution of design projects through the application of knowledge. This design studio process led to Schon's (1983) development of the well-known concept of reflective practice or the reflective practitioner as a "dominant 'theory of practice' for all professional and vocational education" (Schon, 1983, 64).

The process of learning in the architectural studio is a key aspect which has been analysed and adopted by various other disciplines. For example, Kuhn (2001) explored architectural design studio education as "a provocative and fruitful model for engineering and software design education" and described features of the design studio which are valuable and transferable to other disciplines. These features include projects that are "complex and open-ended", solutions (that) "undergo multiple and rapid iterations", frequent formal and informal critique from varied sources including peers and experts, and dealing with heterogeneous issues which "are considered, often in the same conversation" (Kuhn, 2001, 349-351). These projects can "simulate the complexities of real life projects" (Webster, 2008, 63) and the process of design and development is supported by interactive dialogue and close relationships between students and their design tutors. As a concept, it is possible to transfer the essence of the architectural design studio to project-based learning experiences in other disciplines. It is however

important to recognise and learn from the shortcomings of the architectural studio and to identify its essence.

The architectural studio is inherently a space where the "cultural capital of architecture" (Stevens, 1995, 115) is foregrounded. Dutton (1987, 16) argued that there "is a rough correspondence between (architectural) schooling and larger societal practices" and that knowledge transfer is affected by the power relations present in society. This studio culture and the hidden curriculum of the studio is lauded by educators and students alike, but is also challenged and criticised.

For those directly observing and experiencing the architectural studio, namely its own faculty and students, it is and has been clear that the studio sometimes exhibits exclusionary practices (Stevens, 1995; Crysler, 1995), that it tends to award the individual at the cost of collaboration and the collective (Cuff, 1992, Harriss & Widder, 2014, Delport 2016), and that it often deals with fictional projects which are far removed from reality (Cuff, 1992; Salama, 2008, Bashier, 2014; Delport 2016). Stevens (1995) argued that the studio automatically excludes those who are economically and culturally disadvantaged or simply different. He added that the inherent privileges of the studio are "sanctified" by not acknowledging it and that it promotes a certain "giftedness" which comes from having specific experiences linked to background, social and economic status, and upbringing, and not hereditary talents. This "giftedness" becomes a must for success in the studio and contributes to the misconstruing of the "inculcation" power of the studio. Crysler pointed to the "one-directional flow of skills and knowledge (which ignores) gender, race, class, or sexual orientation" and references only "self-actualizing, white, heterosexual, Euro-American male consciousness" (1995, 208) and asserted that the "Spirit of competition" (1995, 215) prevails within the studio.

The American Institute of Architecture Students produced a seminal report in 2005 which addressed studio culture. This report pointed to the

positive aspects of the studio, such as "direct one- on-one interaction between faculty and students, whereby students receive immediate feedback on their work (and that the) studio model offers tremendous potential for creative discovery, exploration of ideas, critical discussions, and risk-taking" (Koch et al., 2002, 4). However the report predominantly addressed the shortcomings of the architectural studio and presented ideas for a change in studio culture and moving away from beliefs which until today are still a part of many studios. Some of these beliefs relevant to the current discussion include that the "creation of architecture should be a solo, artistic struggle", that "collaboration with other students means giving up the best ideas", that it is "possible to learn about complex social and cultural issues while spending the majority of time sitting at a studio desk", and that "students do not have the power to make changes within architecture programs or the design studio" (Koch et al., 2002, 6). The report proposed that the studio becomes a space where students are aware of the "value of collaboration" (Koch et al. 2002:12) and a space in which there is "(a)cceptance of all individuals regardless of race, gender, creed, religion, sexuality, socio-economic background, or physical disability" (Koch et al., 2002, 4). The report also asked for the studio to offer students the opportunity to engage with the real world, where they can learn about their surrounding communities and their needs, and build interdisciplinary relationships for the future. The values proposed in this regard were "optimism, respect, sharing, engagement, and innovation" (Koch et al., 2002, 19).

Although some of the negative aspects of the studio are still present, change has been introduced into many architectural studios globally informed by extensive research into studio pedagogy in the last 20 years. Already in 1987 Dutton proposed a "transformative studio pedagogy" which was meant to interrogate the "value systems of students" and tried

to "break-down … the social relations of hierarchy and competition". In 1994 the Rural Studio was established as a seminal design-build studio which took the studio and students into the real world. At the Rural Studio students work collaboratively to solve real problems in a space which "encourage(s) aspiring young architects to address the ethical responsibility for the social, political, and environmental consequences of what they design and build" (Rural Studio n.d., n.p.). The Rural Studio was one of the first of many design-build and live project studios throughout the globe. Design-build and live projects address real-world problems with usable outcome and have an inherent requirement for student collaboration (Delport, 2016), interdisciplinary collaboration (Harris & Widder, 2014) is a space for the practice of critical pedagogies (Brown, 2012) and more often than not have a strong community, contextual, environmental, and sustainable grounding.

In 2008, Salama conceptualised a theory "for integrating knowledge in architectural design education" (2008, 100) which is "a more responsive architectural design pedagogy, enabling future architects to create livable environments (that) emerges from and responds to societal, cultural, and environmental needs" (2008, 101). His theory is partly in response to studios which present projects that are "hypothetical, largely unconcerned with real life situations, and neglect equally important skills that can be enhanced through experiential learning, research, or real interaction with the realities being studied" (Salama, 2008, 103). Salama's theory is premised on a number of main concepts which include an ethnographic architectural approach, appreciative inquiry, and active and experiential learning (Salama, 2008). These concepts respectively acknowledge the differences that are present in the studio as well as in the world and attempt to introduce and address these in design solutions. The concepts reference a holistic perspective which reflect on "how human systems function (and)

involve participatory design activities… students… doing things and thinking about what they are doing".

In the following section we will introduce the Radically Inclusive Studio and its perspective on the pedagogy of the architecture studio.

Introducing the Radically Inclusive Studio

The Radically Inclusive Studio is an international collective founded during the early stages of the COVID-19 pandemic after an online meeting of the minds. As architectural educators we explore the design studio as a radically inclusive space for teaching and learning (Gorman et al. in-press), a space which we contemplate as an integral part of an ecosystem-of-learning (Morkel & Delport, 2020). We collaboratively practice as the Radically Inclusive Studio through pedagogical design research writing, workshops, and as a collective to share ideas and issues around equity, inclusion, and social justice from our own perspectives. We have all been and still are concerned with architectural pedagogy and the architectural curriculum from research and practice positions in different corners of the world and in vastly different contexts. In this section we start by introducing our personal, geographic, and disciplinary positions to contextualise the chapter. We use our own voices for this personalised introduction. Expressing and acknowledging one's own voice, position, and context is a part of what we value in the Radically Inclusive Studio. We then proceed to explain the inception of the Radically Inclusive Studio and the *6S Conceptual Framework of Inclusive Contexts* (Gorman et al. in-press) which is the underpinning theoretical position.

Hermie Delport

I am an architect, artist, and educator living and working in Cape Town, South Africa. I have been involved with architectural education

for the past twenty years and during this time I have strived to develop more inclusionary practices with a focus on assisting a diverse body of students to excel in the architectural programme. My continued participation in curriculum development focuses on the transformation of outdated, colonialist content and practices and the development of curricula that is underpinned by context, sustainability, and community engagement. I am currently part of a team at the private higher education institution, STADIO. We are developing a new School of Architecture and Spatial Design. One stream of our curricula is sustainable living, which explores the intersection of architecture with livelihoods, sustainable agriculture, urban design and other spatial and built environment practices and disciplines. I am also part of the management team of various other STADIO schools and have the opportunity to discuss the concept of sustainability with disciplines such as fashion design, visual design, and commerce. I have a strong interest and practice experience in natural building, community engagement, and design-build studios.

Jolanda Morkel

My current career focus is on learning experience design, which presents a natural culmination of my love for design, education and innovation. What was meant to be a temporary venture into Higher Education, coupled with architectural practice, led me to a 20-year academic career at the Cape Peninsula University of Technology (CPUT), where I taught in the Department of Architectural Technology and Interior Design in the Faculty of Informatics and Design, in Cape Town, South Africa. During this time, supported by like-minded colleagues, inspired by educational technology mentors, and motivated students, I had the privilege to co-design various transformative learning and teaching interventions employing innovative learning technologies at the undergraduate level. In response to my students asking for more

flexible and blended learning experiences, I was determined to help them demonstrate that alternative studio-based learning journeys can be crafted through the recognition of prior learning (RPL), in combination with online and blended learning technologies, and that these strategies can serve culturally diverse, non-traditional, and working students to promote access, diversity, and inclusion at the university. My recent move to STADIO offers new opportunities and challenges for me to explore the private Higher Education space. The collaborative feminist research and learning space shared with Hermie, Lindy and Michele, has helped me through the pandemic, and provided much inspiration and support, to continue with this work.

Michele Gorman

I am a practicing feminist, designer (architecture and interiors), mother, technologist and activist in Brooklyn, NY (USA). Currently a program Director and full time faculty member within Parsons School of Constructed Environments at the New School, I work in interdisciplinary contexts that address issues around equity, inclusion and social justice within design. Understanding that climate justice and mitigation within design is not just a scientific problem but a social and collaborative one. Working within the New School, I have been able to work collaboratively across disciplines while considering the ethics of our design disciplines. Rethinking hierarchies between our disciplines is critical in approaching the goals of sustainable development. Bringing scientists, philosophers, radical pedagogues, artists, technologists, environmental, ethnographic, interior, architectural, lighting, industrial designers, political leaders to the table is critical to radically rethink the way we design the built environment. It is with great pleasure to find Hermie, Jolanda and Lindy during the global pandemic as feminist allies, collectively creating a Radically Inclusive Studio design framework based on our experiences as women in design between our

global contexts. This framework has been diversely explored within our institutions.

The table is a recurring design element in my practice as a space to share knowledge, stories, experiences, crafts, break hierarchies, and build community. Being part of well renowned feminist design collectives, ArchiteXX and Mistresses of Architecture, in addition to the Radically Inclusive Studio, has provided opportunities to be brave and bring feminism and inclusivity into the design curriculum within my positions at the Pratt School of Architecture and Parsons School of Design.

Lindy Burton

It's impossible to be raised and educated in South Africa, and not be impacted by architectural responses to racial segregation from the past. Spaces and places are a constant reminder of how people were once racially classified. I have built a new identity as an Australian architect and academic, but my African foundations will always underpin my sensitivities to indigenous perspectives, and my approach to design and teaching. My research interests centre on transformative architectural education, the design of innovative learning spaces, and diversity, inclusion and equity in architecture. I am appointed as a board member of the BOAQ, and I provide leadership in AACA Accreditation and SAGE Athena SWAN committees. I am a Senior Fellow of the Higher Education Academy and my teaching excellence has been awarded nationally.

The global event of the COVID-19 pandemic which started in 2020 necessitated a rapid, emergency shift from physical into online space for all realms of education. Many disciplines, including architecture, which traditionally relied on face-to-face interaction and creation as learning opportunities through making (ACSA 2020) - such as creating drawings and the building of models - had to re-invent hands-on interactive

spaces. Architectural studio staff and students were compelled to change and adapt their practices. This sudden move foregrounded how students are often excluded from studio participation by not having access to the required resources, such as data, airtime or even a physical space to work in at home (Mathiba, 2020).

Our collective research into the studio as a radically inclusive space was inspired by this online shift and these explicitly exposed inequalities. By reflecting on our own practices and searching for a means of inclusivity in the studio, we studied the Inclusive Excellence Framework of Williams, Berger and McClendon (Williams et al., 2005). We aligned and expanded this framework into the *6S Conceptual Framework of Inclusive Contexts* (Gorman et al., in-press). The 6S Conceptual Framework includes the Structural Inclusive Context[305], the Systemic Inclusive Context, the Support Inclusive Context[306], the Social Justice Inclusive Context[307], the Symbolic Inclusive Context[308], and the Spatial Inclusive Context[309]. The Structural Inclusive Context[310] emphasises adaptability and flexibility as necessary practices for transformation. The Systemic Inclusive Context addresses the possibilities and capacities to adapt and respond rapidly to change and barriers in both education and the profession. The Support Inclusive

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[305] https://theradicallyinclusivestudio.org/2021/03/17/structural-inclusive-context/

[306] https://theradicallyinclusivestudio.org/2021/03/17/support-inclusive-context/

[307] https://theradicallyinclusivestudio.org/2021/03/17/social-justice-inclusive-context/

[308] https://theradicallyinclusivestudio.org/2021/03/17/symbolic-inclusive-context/

[309] https://theradicallyinclusivestudio.org/2021/03/17/spatial-inclusive-context/

[310] https://theradicallyinclusivestudio.org/2021/03/17/structural-inclusive-context/

Context[311] places the student centrally with an emphasis on mental health and well-being. The Social Justice Inclusive Context[312] addresses oppression and injustices of both the past and present. The Symbolic Inclusive Context[313] acknowledges that architectural education is a powerful creator of culture which is articulated in the world through the architectural student as well as the graduated architect and their design solutions. Finally, the Spatial Inclusive Context addresses those boundaries that exist and that can be created with the ability to exclude, including, but not limited to space, time, knowledge, power, and practice.

How do we define inclusivity in the Radically Inclusive Studio? In the context of architectural education, we frame inclusivity as all-encompassing and addressing the needs of staff, students, and the communities that are affected by the teaching and practice of architecture. Projects that address the history of racial, cultural, and gender exclusion from the design discussion is central to a feminist design practice. We consider who is excluded and oppressed in our built environment in order to propose new inclusive design futures. In terms of sustainable development, we acknowledge that there "are four dimensions … society, environment, culture and economy – which are intertwined, not separate" (UNESCO, n.d.). We define radical inclusion towards achieving the purpose of the SDGs as the inclusion of marginalized voices and communities on the topic of climate solutions. We posit that radical inclusivity acknowledges the intersection of decolonisation and decarbonisation of the environment and that it

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311 https://theradicallyinclusivestudio.org/2021/03/17/support-inclusive-context/

312 https://theradicallyinclusivestudio.org/2021/03/17/social-justice-inclusive-context/

313 https://theradicallyinclusivestudio.org/2021/03/17/symbolic-inclusive-context/

addressed the shifting of power and making of spaces for all intelligences and practices.

One of the core concepts of a Racially Inclusive Studio is that of a community (Williams, 2017, 89) of inclusive practitioners, which include the staff and students who participate in the studio as well as the broader communities of the varied contexts within which these studios operate. The 6-S Conceptual Framework promotes flexibility and a supportive environment, it speaks to diversity in the studio as an advantage, encourages the building of strong relationships and has a culture of sharing, it emphasises collaboration, equity, empowerment and self-determination, stresses inclusivity, and resilience, and works towards the expansion and variation of learning settings (Gorman et al. in-press). The Radically Inclusive Studio is part of an ecosystem, and we agree with Lambrou that analyses of "the environment as a set of ecosystems asks that we move away from linear investigations in favor of assessing the interaction of people with their surroundings" (in UrbanNext, 2018, n.p.).

For the Radically Inclusive Studio we place emphasis on a curriculum with studio projects which are integrative (Salama, 2008) and considers contextual, adaptive, real-world, experiential, collaborative, and interdisciplinary perspectives. We highlight that everyone who participates should bring their own voice, opinion and experience to the project in a space that is inclusive as we work together towards an anti-oppressive, decarbonised and decolonised world.

An integrative project approach resonates Kioupi & Voulvoulis who propose, as a means to achieve the aim of the SDGs, an "integrative approach that addresses all 17 SDGs" which they see as essential for "our societies and economies… to transform from the current unsustainable state onto a sustainable and resilient path" (2019, 4). We agree with Almonte who describes integrated education as a way to

"explore knowledge within the context of its application - where students speculate, investigate and make propositions in a creative and rigorous manner" (Almonte, 2012, 24).

Contextual perspectives references the ethnographic approach of Salama (2008) and acknowledges and emphasises a thorough knowledge of and response to the context of the project. This is also emphasised by Shahbazi who speaks about a building as a tiny aspect of "contextual architecture". He further mentions "contextualism as one of the main principles of sustainability" and asserts that "sustainable architecture is a multi-value combination" of contextual responses (Shahbazi, 2016, 306). Farmer (2013, 107) argues that sustainable architectural design is often "presented either as a challenge of rational, prescriptive problem solving or alternatively as an instrumental means of specifying technologies that satisfy predefined environmental target" without taking into account the complexities of the context, such as the "practical, theoretical, technical or social issues". Farmer (2013) also speaks of the integrative and reflexive processes which are necessary to acknowledge the meaning of architectural technological solutions and the impact of and on the context. He references a design-build project by students with high design engagement with the users and says that such "reflexive processes would help to reframe design problems in a way that enables 'designers, constructors, users and, crucially, communities [to] confront environmental problems, learn about their (and others') values, beliefs and practices, and adjust and progressively enhance the ecology of built environments'." (Harald in Farmer 2013, 115).

Design-build and live projects (Harris & Widder, 2014) are placed in real-world communities and contexts and inherently rely on collaboration amongst all participants (Delport, 2016). These types of projects are also typically interdisciplinary and/or in collaboration with practitioners and deal with the solving of real problems with an outcome

that directly affects the lives of people. These projects are ideal vehicles for inclusionary practices.

We value the approach of the School of Architecture at Sheffield Hallam University that from inception to the end of the design process encourages their students "to ask and try to answer the following questions: Who does what and with what resources? Who gains, who loses out? Who pays the highest price? Who is excluded? And, crucially, how could projects and processes be radically improved to make them more fair and inclusive?" (RIBA 2020, 30)

As we consider the call to address environmental justice within our built environment, we must consider the power dynamics and social justice impacts that current and future laws and policies will exert on our communities. As architects, we embody spatial, social, indigenous, and material practices that work towards a socially just approach to the reduction of global warming and CO2, circular economies, and decarbonising practices. We therefore believe that the Radically Inclusive Studio approach can address the need to successfully include and address the SDGs in studio and problem-based learning experiences.

The SDGs through the Lens of 6S Conceptual Framework

In this section we align the 6S Conceptual Framework of Inclusive Contexts, which is the underpinning framework of the Radically Inclusive Studio, with the intention and implementation of the SDGs. We posit that as much as the six contexts of the 6S Conceptual Framework are connected, sometimes intertwined, and often overlapping (Morgan et al. in print), the SDGs are similarly connected, intertwined and overlapping. By aligning the SDGs with the 6S Conceptual Framework we (re)organise the SDGs for the purpose of this exploration. For this alignment which takes the focus to the SDGs we

have adapted the original naming of the Inclusive Contexts. For example, Structural Inclusive Context becomes Structural Inclusivity. The motivation for this adaptation is that *Inclusive Contexts* can be interpreted as place-based or circumstance-based, referencing the studio as place and experience, whereas *Inclusivity* more directly references the "practice or policy of providing equal access to opportunities and resources for people who might otherwise be excluded or marginalized" (Lexico, n.d.). The concepts of practice and policy resonate with the nature of the application of the SDGs. We have as objective to present the 6S Inclusivity Framework for sustainable action as the foundational approach towards incorporating the SDGs in a Radically Inclusive Studio and in other disciplines through studio or project-based learning experiences.

The 6S Inclusivity Framework includes Structural Inclusivity which speaks about the underlying structures supporting every aspect of life and livelihoods. As a construct, it has a physical and/or formal dimension which provides the space and context for our daily operations and engagements. The SDGs which align with this structural framework are 6: Clean Water and Sanitation, 7: Affordable and Clean Energy, 14: Life Below Water, and 15: Life on Land. Without these structures in place, none of the other SDGs would be achievable.

Systemic Inclusivity references those SDGs which are developed within the structural framework as response mechanisms and support tools and systems to enable inclusivity as an overarching aim of the SDGs. The associated SDGs are 4: Quality Education, 8: Decent Work and Economic Growth, 9: Industry, Innovation and Infrastructure.

Social Justice Inclusivity relates directly to the inclusion of people and communities who are affected. Here we include 1: No Poverty, 2: Zero Hunger, 3: Good Health and Well-being, 5: Gender Equality, 10 Reduced Inequalities.

Symbolic Inclusivity speaks to goals achievable by each individual and accountable collectives and includes SDGs 12: Responsible Consumption and Production, 13: Climate Action, and 16: Peace and Justice Strong Institutions.

Supportive Inclusivity involves SDG 17: Partnerships to Achieve the Goal and SDG 3: Good Health and Well-being. None of the SDGs will be achievable without strategic and constructive collaboration and partnerships, whether the goal relates to practice or education. In addition, to ensure Supportive Inclusivity, it is essential that the users, the community as the inhabitants of cities are placed at the centre to support their collective health and well-being.

Spatial Inclusivity addresses 11: Sustainable Cities and Communities which speaks directly to the built environment and spatial design disciplines and industries.

For each of the *Inclusivity* dimensions we share examples below. These examples present how the SDGs and sustainable concepts are interpreted, included, and actioned in current architectural practice and education. Some examples from the practice of the authors or their affiliated higher education institutions are also included.

With these examples we intend to highlight the overlapping concerns expressed and actions taken by architects and students to address the SDGs. Presented through the lens of the six *Inclusivity* dimensions, we have as objective to define a set of principles which represent a foundational approach towards incorporating the SDGs in a Radically Inclusive Studio and also in other disciplines and teaching methodologies/ approaches.

Structural Inclusivity

The SDGs which align with Structural Inclusivity are 6: Clean Water and Sanitation, 7: Affordable and Clean Energy, 14: Life Below Water, and 15: Life on Land.

Buildings and urban design can assist in the collection of rainwater, the provision of safe drinking water, washing and cleaning facilities, and the treatment of wastewater (Mossin et al., 2020a; Mossin et al., 2020b). However, in many parts of the world clean drinking water and a safe, accessible toilet is still not a part of everyday life. In Vietnam, for example, many children do not have toilet facilities at school. To solve this problem, H&P architects designed a beautiful and robust toilet and wash building which harvests and reuses greywater (Stevens, 2015; Mossin et al., 2020b). Since this problem is widespread in Vietnam, the architects designed the building so that it could be constructed at low cost, quickly, and with local skills and labour, which makes it possible to replicate easily on other sites. Furthermore, the vegetation structures which form the four edges of the building not only help to regulate the temperature, but also to strengthen the load-bearing structure and provide a place for growing food and therefore the building offers multiple solutions at once (Mossin et al., 2020b, 92).

The township Imizamo Yethu in Hout Bay near Cape Town, South Africa, has very poor infrastructure and a ratio of approximately 60 households per toilet and 390 households per tap (Tensile Cables, 2017). To address this the second year architecture students of the University of Cape Town designed and built a number of washing platforms which was significantly improved over the course of these projects. The washing platforms provide "more dignified places for water collection, spaces for the washing of clothes and the integration of these with shared toilet facilities" (UCT, 2012, 3) and include built-in furniture and wash tops with decorative tiles and concrete and shade structures (IOL, 2018).

The built environment predominantly affects the oceans through waste such as plastic and untreated pollutants in water run-off that enters the oceans. The selection of building materials and methods plays an important part in managing the pollutants generated in the construction

and maintenance processes. Projects such as the ReUsed Materials project that investigates the re-use of ocean plastic waste in building and other materials start to contribute to the solution (Mossin et al., 2020b, 202; Cestari, 2020).

The intentional design of urbanscapes, parks, roads, rainwater harvesting and stormwater systems can make a significant contribution to "reduce stormwater runoff, erosion, and contamination of water surfaces with pesticides" (Bartolacci, n.d.). Architects often visually communicate or celebrate the harvesting of rainwater as part of a building's formal solution through devices such as inverted roofs or water tanks that announce an entrance. Even in small projects, for instance the design of freestanding public toilets in San Francisco, architects are making an effort by integrating rainwater harvesting and local vegetation (Wang, 2019).

Conscious design can reduce the amount of energy required to build and operate buildings. Designing with passive design principles and the use of local materials and labour are some of the ways that architects like Francis Kéré contribute to minimise the use of energy. Kéré's work, including the Gando Primary School and Lycee Schorge Secondary School in Burkina Faso, uses passive design strategies such as overhanging roofs to keep the sun off the walls, locally made mud bricks and locally harvested stone, and passive design devices such as wind-catching towers (González, 2017).

The SDG *Life on Land* refers to how we should "(p)rotect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss" (Mossin et al., 2020b, 206). The built environment can contribute here with the smallest design interventions, such as providing insect hotels or green animal corridors in cities, by contributing to biodiversity and including all forms of life.

Architects should promote the use of materials, especially wood, that come from sustainable sources and design with the principle of circular design allowing for the disassembly and future re-use of material.

From a pedagogic perspective the integration of sustainable and inclusive principles in a curriculum is essential to inform what is taught, from which position, and how studio projects are conceptualised. At STADIO, author Hermie Delport and her team design the architecture and spatial design qualifications and programmes underpinned by inclusivity, design thinking, ecosystem approaches, and regenerative and sustainable futures. To put this in practice STADIO in 2021 hosted a series of webinars focused on sustainable built environments in collaboration with the Sustainable Built Environment Conference for which STADIO is the co-host in 2022 (SBE, n.d.). The webinars focused on sharing current thinking patterns and tools with built environment professionals and prompting discussion for action. The discussions reflected on implemented strategies, whether successful or not, and centred around theories, case studies, and reflections on the conceptualisation of sustainable environments. Despite a diverse collection of opinions and proposed solutions the overall consensus was that collaboration and a unified effort from practitioners and academics alike are required to guide architectural involvement in the development of a sustainable, regenerative, and renewable future.

Systemic Inclusivity

The SDGs included in Systemic Inclusivity are 4: Quality Education, 8: Decent Work and Economic Growth, 9: Industry, Innovation and Infrastructure.

Architects can contribute to the provision of quality educational spaces through the design of learning environments by questioning traditional or outdated educational models as part of the conceptual development and by finding appropriate and alternative ways of making

new educational spaces. The design, building, and operational process can in itself play an educational role by involving the surrounding community and future occupants of the building. Sadly this strategy is often only part of the development of educational buildings for under-resourced and outright poor communities.

Quality educational spaces have the potential to contribute to the health of its users. This is just what the Frederiksbjerg School in Denmark by a team of Henning Larsen, Hoffmann, GPP Architects, Niras Møller og Grønborg, and the City of Aarhus does. The design of the spaces and structures encourage physical activity by providing alternatives for vertical circulation, such as a climbing wall, doing away with tables and chairs and providing other innovative "physical challenges" (Mossin et al., 2020a, 38). A more low-tech but equally progressive solution is the "Handmade School" in Bangladesh. Here architects Anna Aeringer and Eike Roswag conceptualised a school which was built collectively by the architects, local craftspeople, and the pupils, parents, and teachers. The construction methods referenced local techniques and included news methods based on the traditional which could afterwards be implemented to improve the construction of local houses. The local materials and passive design strategies create an environment conducive to learning and spaces in which children can climb into and over contribute to their physical learning and well-being (Fiona 2010).

The Design Build Research Studio (DBRS) of the Cape Peninsula University of Technology, of which author Hermie Delport was a founding member, designed and built projects at an under-resourced mult-grade school in the rural area of Grabouw close to Cape Town. The school had no undercover gathering space for the 300 primary school children. The DBRS built a roofed outdoor space which became a multi-functional place for teaching, assembly, concerts, and simply for the

children to sit outside on the deck, built from local recycled fruit crates, to eat their meal which is provided by the school. In subsequent projects at the same school a shade structure for the library, housed in a shipping container, and a playground/entrance defining structure was built. Funding is always an issue for these types of design-build student projects and the use of recycled and of locally available resources was both a necessity and an attempt to leave as small an environmental footprint as possible (Delport, 2016).

Design-build and live project studios are at-present widespread in architectural education with international bodies dedicated to the research and facilitation of these projects. These include the Live Projects Network (Live Projects Network, n.d.) and the Design Build Xchange platform (Design Build Xchange, n.d.). Architecture schools include design-build and live projects in their teaching, either as stand-alone projects or as integral parts of their curricula (Sutter, 2014; Harris & Widder, 2015).

Design-build and live projects are typically situated in under-resourced communities, and focus on sustainable, collaborative, and interdisciplinary practices. (Design Build Xchange n.d.; Delport, 2016). These projects give students a sense of purpose through the contribution they make to improve the lives of real communities through design solutions. The pedagogy and practice of design-build and live projects have been extensively researched in the past decade, yet the ethics and long-term and economic sustainability of some of these projects ares still questioned, especially where a built project is left to the community to complete or manage after the participating school, often from abroad, had returned home after completing their work.

The Unit for Urban Citizenship (UUC) at the University of Pretoria in South Africa is an example of a studio which is invested in working in the upliftment of their local communities. They follow a theoretically informed, research-based, participatory design approach to include the

voice of the community in their design proposals. Their aims, mentioned here since it echoes the aims of similar studios, include "transdisciplinary research on urban citizenship … social impact through evidenced-based multi-scalar interventions … socio-economic and spatial transformation imperatives (and to enable) the UN Sustainable Development Goals" (University of Pretoria, n.d.).

To address the goal of decent work and economic growth in the built environment translates to designing spaces, systems and structures that enable the movement of people through circulation and transportation, creating living and working conditions that are pleasant, productive, and adhere to health and safety regulations. On a construction level it translates to the inclusion of local labour where economic opportunity is tied to building processes, which is typical in lower income communities (Mossin et al., 2020a). An example of an architectural practice working towards decent work and economic growth is Local Works in Uganda. Local Works collaborates with international and local partners to produce buildings such as the RUCID College for Organic Agriculture which is built exclusively with local materials, methods, and labour. (Local Works n.d.).

Innovation in terms of building products, materials, and systems include conceptual approaches, and experimentation with new building materials. Architect Winy Maas[314] of MVRDV[315] recently proposed a "new inhabitable geological layer called The Sponge" that would cover the earth and "would be a giant, multilayered biostructure capable of nurturing both people and planet" (Maas 2021:n.p.). Conceptual ideas like this plant the seed towards future thinking and possible solutions for environmental sustainability for human life. Entities such as TerraForm ONE, which researches and develops socio-ecological solutions

[314] http://www.dezeen.com/tag/winy-maas

[315] http://www.dezeen.com/tag/mvrdv

collaboratively and through the disciplines of art, architecture, and urban design and "cultivates resilience through innovations in building, transportation, infrastructure, water, food, waste treatment, air quality, and energy" (TerreForm. n.d.) is moving innovation forward through conceptual and constructed projects. Their projects include an Anti-Extincion Library, which was built as an exhibition space and permanent home for the "embryonic cells and DNA of rare lifeforms" (TerreForm. n.d., n.p.) and Home Alive, which is a home prototype "made from grafted living woody plants and old growth trees" (TerreForm. n.d., n.p.) and which combined a timber and aluminium structure.

Mycelium, a fungus that can be grown to produce building blocks, is being researched in various contexts as a new alternative solution to cement and concrete. The growing medium for the fungi can include waste materials such as sawdust (GreenBuildingAfrica, 2020). In Namibia in the BioHAB project a multidisciplinary team is working with two architectural firms, Redhouse Studio and Kamau Architects, using alien vegetation as a substrate to grow both food and building material for affordable housing (BioHAB, n.d.). In the USA, The Living Studio and Ecovative Design collaborated on the Hy-FI Project where mycelium bricks were used to build a 12 meter high, three-tower exhibition space outside the MoMA in New York. After the exhibition the towers were dismantled and composted (Stott, 2014).

Working with recycled materials, whether plastic, glass, brick, or building components such as windows, requires a rethink of the "fixed and standard way of designing" and a move towards "new approaches in fields we did not fully imagine before". This is according to Peter van Assche of Dutch architecture studio Bureau SLA[316], who experiments with reducing ecological footprints and taking the "circular idea to a maximum level" (Frearson, 2017, n.p.). The Parsons Healthy Materials Lab, in which author Michele Gorman participates, researches, educates,

[316] http://www.bureausla.nl/

and collaborates with manufacturers to find and develop non-toxic material for building sustainably. The School of Architectural and Spatial Design at STADIO, of which author Hermie Delport is a part, collaborates with the Natural Building Collective to promote the use of natural and recycled building technologies through short learning programmes and hands-on workshops for students and design professionals.

Social Justice Inclusivity

The Social Justice Inclusivity includes the SDGs 1: No Poverty, 2: Zero Hunger, 5: Gender Equality, 10: Reduced Inequalities.

> The hidden language of architecture can aid and abet racial and income-based inequalities; understanding that truth is a step toward changing it… (we need to promote) design as a tool for social justice. (Our) mission is to "organize, advocate, and design for racial, social, and cultural equity" (Mortice, 2017, 1, 2).

Where people live everyday impacts how they access services, food, education, and other resources, which in turn is influenced by visible and invisible hierarchies and power structures in society. In the built environment buildings and spaces can exclude when lacking access and permeability, presenting large undefined facades to public spaces, introducing economically out-of-scale developments, and using "punitive design for security" (Mortice, 2017:1-4). Examples include social housing which disconnects people from opportunities either by being far from work environments or food sources or instances of gentrification which leads to displacement (Mortice, 2017, 1-4).

Examples of social and refugee housing designed by architects in an attempt to address poverty include the work of architect Alejandro Aravena who designed four social housing typologies, which his firm, Elemental, made available for free online. His intent is that these

typologies should be downloaded and adapted to other contexts in the quest to provide affordable and quality housing globally. One of the four designs is an incremental building in which recipients receive only half a house that they can adapt and complete over time as the means arrive (Busta, 2016; Zilliacus[317], 2016). Architect Shigeru Ban has developed numerous disaster relief projects by "finding structural uses for fugitive materials, including paper and cardboard" (Capps, 2014). Examples of his work include paper log houses for several countries affected by earthquakes, a cardboard cathedral and an elementary school made from paper. Both Aravena and Ban are Pritzker Prize winners.

Other architects work on improving local methods of building to assist communities to use what is available in a manner which drastically improves their living conditions. The architectural practice LocalWorks in Uganda worked with the Batwa people who were evicted from their forest home, ironically for the preservation of local wildlife. The Batwa people constructed their own shelters in their new context, but these were not robust enough to withstand the local conditions. With the assistance of LocalWorks the technology of the local materials were improved and the Batwa people now have sound houses and a small community centre (Localworks, n.d.). In India the architectural practice Anupama Kundoo designed the Volontariat Home for Homeless Children. The buildings are constructed with mud bricks which are baked in-situ, the house is basically constructed as a kiln, which saves time, money, and energy in the construction process and produces additional baked bricks which are baked in the centre of the in-situ house during the firing process (Mossin et al., 2020a, 12).

To address inclusion in the architectural profession, the Royal Institute for British Architects (RIBA) encourages its members to employ an Equality, Diversity and Inclusion Strategy in their practice to address the SDGs. RIBA believes that such a strategy is imperative for

[317] https://www.archdaily.com/author/ariana-zilliacus

"creating opportunity and enabling success" and that it is "through ensuring equality, diversity and inclusion that practices can build and maintain a creative, cultural, and commercial competitive advantage" (RIBA 2020, 12).

> "The built environment contributes to the securing of food supplies through planning, landscape and building designs that protect existing ecosystems and prioritise the preservation and expansion of areas for food production" (Mossin et al., 2020a, 27).

Architecture and agriculture has become somewhat entwined in the past decade and the term "agritecture" has emerged as an describing term (Agritecture, n.d.). Architects are conceptualising and building urban food gardens and farms in collaboration with urban designers and agricultural practitioners in an attempt to eradicate food deserts, which are "concentrated in low-income and historically marginalized areas" (Charles, 2021, 2). Although the effectiveness of these strategies are still being investigated, research suggests that urban farms "advances food justice, access, and economic equality… (and) have an important role to play in localized, just food systems." (Siegner et al., 2018, 23). Architects are contributing conceptual ideas on the design of vertical and other urban farms from Brooklyn to Shanghai (Dezeen, n.d.) but most of these are still in the project phase. An interesting example is Impact Farm which is a small moveable 50m green house. It uses hydroponic systems, and has the capacity to produce up to three tonnes of food per year. It has been built in Harlem and Copenhagen and acts as an educational space (Human Habitat, n.d.).

Architectural student projects in the space of food justice are often linked to design-build or live project studios. Examples include the design-build of a mobile greenhouse for the Center for Urban Ecology in Indianapolis by the College or Architecture and Planning of Ball State

University (Renze-Rhodes, 2016). Another example is the work of the School of Architecture and the Department of Landscape Architecture at Clemson University in collaboration with Feed & Seed, a non-profit organisation with the mission of "addressing the social inequities present within the disenfranchised, and predominantly, African American neighborhoods" (Hambright-Belue & Holland, 2016, n.p.). Student work in the Feed & Seed Studio is informed by thorough research which inform sustainable solutions and include strategies to integrate the community with the Feed & Seed farm, educational initiatives about food production, farming, and the related buildings and site infrastructure, collaborations with local business to find place to sell the farm's produce, and the design of a food hub (Hambright-Belue & Holland, 2016). Some of the students of Ball State University had this to say about their participation in the project: "The professors set us up not just for a concept but for an actual product. You can't ignore how it will affect real people, and that's real life. The building has to work; it can't just be a concept. It was always the first thing we talked about in our classes — how we're going to affect a community. But to actually be a part of that, and see how you've impacted lives for the better, well… " (Renze-Rhodes, 2016, 21-22).

In a pursuit for social justice, chapter author Michele Gorman has hosted feminist design roundtables around topics such as "Can Design Save the Refugee Crisis", Feminist Domestic Mutations, new feminist design practices and pedagogies. In 2018, she designed and hosted an exhibition for the feminist group ArchiteXX, titled "Now What?! Advocacy, Activism, and Alliances in American Architecture since 1968"[318]. The exhibition examined the overlooked history of architects and designers who were — and still remain — at the forefront of the profession's participation in the larger civil rights, women's, and

[318] http://bustler.net/events/10966/now-what-advocacy-activism-and-alliances-in-american-architecture-since-1968

LGBTQ movements over the last 50 years. This exhibition was invited to the Chicago Architecture Biennial. When it was found that the sponsorship for the Biennial was by the fossil fuel industry, the invitation was declined. The exhibition has travelled internationally since, inviting participants to add under-represented groups in their quest towards equity and inclusion within architecture. In 2020, Michele also collaboratively launched The Dinner Party[319], inspired by Judy Chicago's, for the feminist group, Mistresses of Architecture, where 40 under-recognized women who have made a significant contribution to the field of architecture were recognized and archived.

From an educational perspective and focusing on Radically Inclusive Studio principles, Michele has introduced alternative and inclusive design reviews and gradeless assessment in her studio practice to give more agency to the students to be responsive to real world issues from their diverse experiences and communities. Students are treated as collaborators in a spirit of experimentation and opening up new research territories. Grades have been documented as reinforcing hierarchies within the classroom, placing judgement and rating over discussion, meaningful feedback and learning (Blum, 2020). Michele explains that the process of grading in assessment results in students working towards a grade, seeking approval from their professor instead of engaging in the learning process. Instead, with gradeless assessment, students are focusing on meaningful feedback that gives graduate students more agency in guiding their own research. Students are able to take risks and weigh feedback from a number of perspectives, building experience in decision making to build confidence in self-guiding their own research.

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[319] https://news.pratt.edu/article/soa-launches-mistresses-of-pratt-to-recognize-the-work-of-women-educators/?_ga=2.118849737.1304353347.1641328327-827110643.1631641759

Symbolic Inclusivity

Symbolic Inclusivity includes SDGs 12: Responsible Consumption and Production, 13: Climate Action and 16: Peace and Justice Strong Institutions.

> "the design of space communicates power dynamics and value systems" (Mortice, 2017, n.p.)

The symbolic meaning of the buildings and spaces that address these SDGs can inspire communities to act collectively and accordingly and can instill confidence and trust in the systems that are meant to serve and protect and implement. Civic buildings, where people participate in processes that regulate and organise society, and community buildings, where people congregate to worship and share resources are physical spaces and places in which the values of society are made visible through practice. The design of these spaces and places should be "inclusive, welcoming, secure and non-discriminatory" (Mossin et al., 2020a, 137).

From a built environment perspective responsible consumption and production speaks to the circular systems necessary in the built environment. Ironically, traditional/vernacular buildings which were built using natural materials and methods were able to return to the earth once the building served no purpose any more. Today there is widespread, indiscriminate use of unsustainable materials such as concrete, which has a huge ecological and energy footprint.

Sustainable solutions include the use of materials and methods that allow for disassembly and re-use and the design of flexible and adaptable spaces, which can change its function over time as required. Recycling and upcycling is another way of addressing the huge amount of building waste. Interesting, and beautiful, examples of recycling and upcycling include the use of plastic chairs (Froelich, 2017), plastic baskets (AD Editorial Team, 2017), or plastic ice cream containers

(SHAU Indonesia, 2016) as the facades of buildings. Making these plastic waste products a visible part of the building structure serves as a reminder that products we consume ends up somewhere, if not on a building, possibly in landfill. This action in itself becomes a comment on our consumerist lives and serves as an educational strategy.

In celebrating the symbolic significance of water in the Uthai Thani province, a design-build collaborative project between the students of the International Program in Design and Architecture (INDA) at the Chulalongkorn University in Bangkok, the architectural practice Pareid, and Mitsubishi Elevator Thailand resulted in a mixed-use water collecting structure at a primary school. Water holds a specific symbolic meaning in this context since it has "cultural and practical significance linked to agriculture, tradition, and festivities" (Navarro, 2020, 1). The project was part of the "Design Build for Community" summer programme of INDA with the objective to create socially relevant spaces at schools. Here the celebrated visibility of water collection and response to the climatic context, which varies between monsoons and droughts, serve to remind students of the environmental condition and their heritage in a functional and beautiful multi-purpose gathering space.

On a symbolic level Parsons New School awarded Michele Gorman, MFA Interior Design Director, and her collaborator, MFA Industrial Design Director, Yvette Chapparo, funding for a Decarbonized and Decolonized Dinner Party that will collaboratively be launch between Parsons Healthy Materials Lab, Zolberg Institute on Migration and Mobility, and Parsons School of Design graduate programs in 2022. The proposed public program is an outdoor open dinner party, a performative act, to bring attention to the climate crisis and its intersection with the impacted New York City communities. The dinner embodies a material practice that works towards the mitigation of carbon through the design

process and materials used. The performance aspect is a discussion about who is affected; guests (New York City politicians, scientists, community groups, civil rights activists) discuss a socially just approach to the reduction of global warming, circular economies, and decarbonizing practices and addresses the link to decolonisation. "Decolonizing recenters the conversation away from who is around the table to the systemic forces that reproduce inequality and marginalization" (Hadjiyanni, 2020).

In terms of practice governance, as part of addressing peace and justice, architects have the responsibility to ensure that "procurement and construction processes … discourage theft, corruption, bribery and all other forms of organized crime. The building industry must also ensure that the extraction, production and handling of building materials do not rely on abuse, exploitation, human trafficking or child labour." (Mossin et al., 2020a, 137).

> It's incumbent on the designer to bring the voice of community end users to the table—a strategy that's a good place to start, in the effort to turn design toward the service of inclusion and equality. (Mortice, 2017, n.p.)

Supportive Inclusivity

Supportive Inclusivity addresses Goals 17 and 3. SDG 17 focuses on Partnerships to Achieve the Goal and SDG3: focuses on Good Health and Well-being.

Resilient communities can withstand both acute shocks and chronic stressors brought about by climate change, disaster, poverty and conflict. STADIO Higher Education, under the leadership of author Jolanda Morkel, participates in such a project that aims to explore and develop transdisciplinary frameworks for resilient design education targeting university students across a range of study areas. The multi-disciplinary, multi-institutional, global partnership comprising practitioners and

educators from Scotland (Heriot-Watt University and Icecream Architecture), Australia (Queensland University and University of Sydney), New Zealand (University of Waikato), Nigeria (University of Lagos), and, South Africa (STADIO Higher Education), was first initiated at a Royal Academy of Engineering Symposium in Kuala Lumpur. The core team was expanded to include eight members across six Higher Education Institutions and a multi-disciplinary architectural practice secured funding from the Royal Academy of Engineering's (RAEng) Frontiers of Development Scheme to host a workshop at the University of Lagos scheduled for April 2020, to develop a curriculum for place-based resilience education. Because of the Coronavirus outbreak in early 2020, travel was prohibited, which required a resilient approach to collaboration and research design. The revised set of objectives to accommodate this disruption include the aim to build a community of practice and a library of shared resources to support teaching and learning for community resilience in higher education.

Community resilience describes the ability of communities to "take meaningful, deliberate, and collective action to remedy the effect of a problem, including the ability to interpret the environment, intervene, and move on. More than the ability of members to cope individually, community resilience involves interactions as a collective unit" (Pfefferbaum et al., 2008). The website, https://www.learningforresilience.com/, outlines the work since the start of 2020, including research, virtual events, blended learning methodologies and open source content, and the establishment of a learning for resilience network. Through the global collaboration, the formulation and sharing of community resilience research and practice from around the world is facilitated, workshops, webinars and global networking events are hosted, engaging pedagogical resources and methodologies are shared, a global network of practitioners, academics, and community members are

invited to collaborate and share, across a range of fields including design, science, social science and others.

Contributing to good health and well-being the Healthy Materials Lab at the Parsons New School, of which author Michele Gorman is a part, promotes change at a systemic level by educating communities, students, teachers and professionals about the dangers of toxic building materials and the healthy alternatives that are available. The Lab also assists under-resourced communities to remove toxic materials from their environments and supports manufacturers to "promote transparency and drive innovation" (Healthy Materials Lab, n.d, n.p.).

Another interdisciplinary initiative, but in this case addressing SDG3, is the Healthcare Excellence Acceleration Lab (HEAL) of the Queensland University of Technology (QUT). Co-author Lindy Osborne Burton is the Chief Investigator for this project that explores the improvement of the Queensland healthcare system, spaces, community interactions and communication through co-design. The impact of the HEAL project recently received two 2021 Good Design Australian awards, namely for the 'social impact' and 'service design' categories, for demonstrating tangible benefits of design thinking in positively transforming healthcare in Australia. (QUT Design Lab, 2021).

> "Architecture, simply put, plays a crucial part in creating a built environment that supports good health and well-being. Examples of this span greatly and can be found in housing that reduces the risk of infection with malaria, in patient-community buildings and in the design of workout equipment for public parks." (Mossin et al., 2020a, 23).

Spatial Inclusivity

Spatial Inclusivity addresses SDG 11: Sustainable Cities and Communities which speaks directly to the built environment and spatial design disciplines and industries.

The everyday practice of professional architects and architectural education is centered on the design of cities and communities. From a spatial inclusivity perspective the profession, both professionally and educationally, can and does play a role in the broader built environment. Architects are often consulted outside the scope of their disciplinary boundaries because of the broad and holistic way of thinking that is taught in the architectural studio. This allows architectural practitioners to add value beyond the boundary of their immediate disciplinary context.

Professor Douglas MacLeod, Chair of the Centre for Architecture at Athabasca University, Canada, published a fictional work entitled The Architecture of Hope. Hope is a town a decade or two in the future. The story contributes concepts and ideas of what regenerative way of life could look like and comments on our current cities (or towns) and communities, which are "overpriced, poisonous, overcrowded, unhealthy … not because they have to be but because it suits the vested interests that build, operate, and control them ..." (McLeod 2020, 11). In the town of Hope the people of the community: "Restore more of the natural environment than they occupy; Purify more water than they contaminate; Produce more energy than they consume; Grow more food than they need; Create income for their inhabitants; Recycle more than the waste they generate; Absorb and sequester more greenhouse gases than they emit; Maximize the use of natural light; Minimize the need for artificial lighting and Contain no toxic chemicals". Written in non-academic language and with an intriguing storyline makes this book into a symbolic message and the principles behind it accessible to people outside the architectural discipline.

Conclusion

From a Radically Inclusive Studio point of view we want to position the studio ultimately as a community of inclusive practitioners which links purposefully and progressively to the cities and communities within which the architectural studio, student, staff, and ultimately the architectural practitioner operate. As radically inclusive designers, we heed the call to address environmental justice within our built environment with cognisance of past and present power dynamics and social justice impacts that policies have on our communities. We believe that a radically inclusive approach towards sustainable development could be informed by the principles of a Radically Inclusive Studio which are embedded in the 6S *Inclusivity* dimensions as a foundational pedagogy.

> In the built environment, this means that each time we build, each time we renovate or develop an element of the built environment, we must ask ourselves: who are the furthest behind here? And we must take it upon ourselves to reach those people first, to make sure that what we build is promoting their inclusion, rather than allowing what we build to limit the participation in society of vulnerable persons. (Mossin et al., 2020b, 13)

The projects presented in this chapter, both professionally and educationally, speak to the principles of the Radically Inclusive Studio. The educational projects were purposefully selected, based on the researchers' practice and education experience for their qualities that are, in varying degrees, integrative, contextual, adaptive, real-world, experiential, collaborative, and interdisciplinary. We found strong alignment of the purposefully selected inclusive architectural practice and education examples that we identified, with the 6-S *Inclusivity* dimensions. Although each example was mapped according to its most

prominent inclusive condition, it was also possible to identify alignment, to a lesser degree, of the other 5 S's of the 6-S conceptual framework. Just as the SDGs are intertwined, where the one goal is dependent on and inclusive of the others, so studio and other project- or problem-based education should never be divorced from the real world and real communities in order to make a substantial contribution and promote inclusive sustainable development.

Many of the projects presented here are situated within communities and aim to include voices from outside the studio. These communities are predominantly poor and under-resourced. This context is where the most impact is made, but begs the question why more well-resourced and affluent communities are not seen to participate in sustainable built environment solutions? Working in poorer communities addresses social justice, but without the rest of society's awareness of these interventions, how is knowledge of the solutions and principles of sustainable living expanded?

May we conclude with the words of Alejandro Aravena:

> "We would like to learn from architectures that despite the scarcity of means intensify what is available instead of complaining about what is missing. We would like to understand what design tools are needed to subvert the forces that privilege the individual gain over the collective benefit, reducing We to just Me" (AD Editorial Team, 2015, 4).

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12

CHALLENGING VIOLENCE, BUILDING A CULTURE OF PEACE

Experiences and Lessons from the Center for Peace Education-Miriam College

Arlyssa Bianca Pabotoy with Jasmin Nario-Galace

Keywords

Peace; Violence; Philippines; SDG 16.

Abstract

The Philippines is faced with various threats to peace and security: poverty, economic instability, violent extremism, inequality, war, community, and gender-based violence, among others. In 2020, the country ranked 129th of 163 in the World Peace Index, due primarily to high levels of internal conflict, extrajudicial killings, militarization, and vulnerability to the climate crisis.

The Center for Peace Education (CPE)-Miriam College is an advocacy center that promotes the building of a culture of peace through its education, advocacy, women and youth organizing, and networking programs. CPE's theory of change is that reduction of violence and a culture of peace can be achieved when people develop the will to address local and global problems, have the skills to resolve conflicts, and work collaboratively and non-violently for justice, equality and human dignity.

This article describes how peace education, interfaith dialogue, advocacy for arms control and disarmament, and the implementation of the Women, Peace and Security and Youth, Peace and Security Agenda have helped change mindsets and attitudes of indifference, passivity and aggression to those supportive of action that will challenge various forms of violence.
Data used were drawn from interviews, project evaluations, surveys, focus group discussions, tracer studies, and personal observations and experiences*.

Introduction

Nestled in between the Pacific and Indochina, the Philippines is an archipelagic country of 7,500 islands, and a growing 109 million people, with the youth making 20% of its total population.[320] Composed of three major island groups, Luzon, Visayas and Mindanao, the country's territory expands to a total of 298.000 square kilometers of land area[321]

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and a total exclusive economic zone of 2.263.816[322] including the highly contested West Philippine Sea (South China Sea).

The country has gone through colonization and foreign rule, three times in recorded history, through: the Spanish colonization for 333 years (1521-1898), the American occupation and Commonwealth (1898-1946), and the Japanese occupation (1941-1945). Upon regaining its first declaration of independence in 1898, the Philippines has had a total of sixteen presidents – two of whom are women; gone through a dictatorship and Martial Law under the presidency of Ferdinand Marcos and organized two nonviolent People Power revolutions in 1986 and 2001.[323]

Living in the Philippines means living through a colorful mix of local languages, with about 78 major language groups spoken to this day and local cultures and practices across different provinces.[324] Despite the centuries of colonization, several indigenous peoples (IPs) remain intact to this day. Spread throughout the country, indigenous peoples constitute approximately 10-15% of the country's total population.[325] The National Commission on Indigenous Peoples reported a total ancestral land and ancestral domain covering more than 5.7 million hectares of land area of

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the country.[326] And though predominantly a Catholic country, Muslims make up a significant number mostly in the Southern part of the country.

Conflict in the Philippines

Despite its young history, the Philippines has and continues to be a host to armed conflict. The country has gone through many peace negotiations, and signed several peace agreements with groups such as the Moro Islamic Liberation Front, and the National Democratic Front-Communist Party of the Philippines.[327]

Over 150,000 were killed in the decades-long insurgency between the Moro National Liberation Front (MNLF) and the Moro Islamic Liberation Front (MILF) against the Philippine government in its fight to establish an independent Muslim region. The armed conflict in Mindanao is rooted in the peoples' continuing struggle for their right to self-determination brought about by the loss of their lands from migrants, continuing "historical injustices" and grave human rights violations committed against them.[328]

Meanwhile, the longest armed insurgency in Asia, the armed conflict between the Philippine government and the Communist Party of the Philippines (CPP) began in 1968, and has claimed more than 40,000 lives, as cited by Conflict Resources.

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[326] Department of Agriculture, *DA eyes idle ancestral lands as food prod'n areas*, 2020, https://www.da.gov.ph/da-eyes-idle-ancestral-lands-as-food-prodn-areas/

[327] Conflict Resources, *The Philippines: the conflict in focus*, n.d., https://www.c-r.org/programme/southeast-asia/philippines-conflict-focus?gclid=Cj0KCQjw4eaJBhDMARIsANhrQAB3tS0pwmhaTv7GZLl0QkPaPEODze1breIuaTZJ4YgbLuf5HxQU2kEaAk1yEALw_wcB

[328] Bacarri, B., *The Mindanao Peace Talks: Another Opportunity to Resolve the Moro Conflict in the Philippines*, 2005, https://www.usip.org/sites/default/files/sr131.pdf

Peacebuilding and the Philippines

Peacebuilding in the Philippines is multifaceted and highly complex. In 2019, in an article by Amnesty International, the Philippines is to be at the most risk from the climate crisis with 47 percent of the country's population highly exposed to climate hazards such as earthquakes, tsunami, floods, tropical cyclones, and drought.[329] Meanwhile in the 2020 Global Peace Index, the country ranked 129 out of 163 countries[330] due to high levels of internal conflicts, extrajudicial killings, proliferation of illicit firearms, and presence of terrorist and non-state armed groups.

But peacebuilding in the Philippines is also resilient and ever growing. Civil society presence is strong with partnership and support from government and the international community. In several instances, civil society, composed of members from academe, non-government organizations, church, and basic sectors have proven their indispensable role in promoting peoples' well-being.

The Center for Peace Education-Miriam College

To reach peace, teach peace – this is the guiding motto at the Center for Peace Education (CPE), an advocacy center of Miriam College (MC). Founded in 1926 in Quezon City, Philippines, Miriam College is committed to the values of truth, peace, justice, and integrity of creation. These values are lived out in the many programs of its advocacy centers including the CPE.

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[329] Amnesty International UK, *Philippines country most at risk from climate crisis,* 2020, https://www.amnesty.org.uk/philippines-country-most-risk-climate-crisis

[330] Institute for Economics & Peace, *Global Peace Index 2020: Measuring Peace in A Complex World [PDF file]*, 2020, page 9.

The CPE works for Peace, Justice and Strong Institutions. It helps address issues of conflict, insecurity, weak institutions and limited access to justice. Through its various programs, it helps contribute to the reduction of various forms of violence (SDG Goal 16.1), address illicit arms flows (16.4), and ensure responsive, inclusive, participatory and representative decision-making through its education, organizing, capacity-building, research, advocacy, and networking programs.

The Center's mission is to build a culture of peace and nonviolence. A culture of peace and nonviolence is built when peoples' mindsets, values, modes of behavior, and ways of life reflect respect for life and human dignity, reject violence in all its forms, support the prevention, resolution, and transformation of violent conflicts, and recognize the importance of cooperation, tolerance, dialogue, and participation of the excluded.

Organizations like the CPE are found all over the world. Many of them have been here for decades working to reduce various forms of violence and death rates.

This article is focused on what a peace organization like the CPE can do to help fulfill Sustainable Development Goal (SDG) 16.1. This paper posits that if the work of the thousands of peace and related organizations around the world on peace education, nonviolence, conflict prevention, conflict resolution, disarmament and arms control, promotion and protection of human rights, and peacebuilding are to be pooled and their impact assessed, we would have found significant reductions to violence and death rates everywhere.

The Center's programs connect and contribute to the 2030 Sustainable Development Agenda:

Peace Education: Teaching Peace to Reach Peace

The greatest resource for peacebuilding are the people themselves, for it is through them that peaceful relationships and structures are

created. Hence, educating people toward becoming peace agents is central to the task of peacebuilding. Peace education, or an education that promotes a culture of peace, is an important peacebuilding strategy. Peace education cultivates the knowledge base, skills, attitudes and values that seek to transform people's mindsets, attitudes and behaviors that, in the first place, have either created or exacerbated a conflict. Hence, peace education is a critical response to both the challenge of preventing violent conflict and the challenge of post-conflict peacebuilding.

In the 1980s, Miriam College started its peace education thrust by infusing peace and global perspectives into subject areas in the undergraduate level. This has become a three-unit undergraduate level course entitled "Introduction to Peace Studies" introduced in the curriculum of the International Studies Department in 1988. Since then, this initial course has evolved into a whole academic minor program called Peace Studies, open as an elective to all college students of various courses, and with many of its graduates working in civil society organizations (CSOs), and in government agencies such as the Office of the Presidential Adviser on the Peace Process (OPAPP). Another curricular milestone in its Peace Studies is the inclusion of a three-unit Peace Education course in the Teacher Education curriculum of Miriam College, which has now evolved into integration into a related Education subject, "Guiding Children's Behavior and Moral Development". A Certificate Program in Peace and Conflict Resolution Program has also been initiated.

Although based in a school, the CPE's mission of advancing a culture of peace through education has gone beyond borders. Since the late 80s, it has been sharing its knowledge and experience with other educational and other institutions and groups within and outside the country. It established the Peace Education Network, a loose network of

individuals and organizations in the country using education as a vehicle to promote peaceful mindsets, attitudes and behaviors within and outside the school system.

The Peace Educators Network (PEN) is one example of the CPE's outreach to external peace stakeholders. PEN is joined by people who identify themselves as peace educators or are keenly interested in promoting education for peace and nonviolence in either the school system or through the community-based or alternative learning systems. The group is active in writing joint letters, statements and appeals addressing peace and peace-related education issues.

A Whole School Approach to Peace

With the Center's search for an education approach that can more effectively promote a culture of peace, the CPE found that the "Whole School Approach" (WSA) is a good organizing framework in doing peace education. This means that the school attempts to infuse the ideas, perspectives and values of peace into the various aspects of the school's life – curriculum; teaching-learning process; student development programs such as education sessions on conflict resolution, peer mediation, challenging prejudice and bullying; faculty and staff development program; materials development; organizational structures and policies, including a restorative student discipline policy; and its social-political actions.

The WSA also engages as many members of the school community as possible (students, faculty, administrators and staff), the wider community of parents and alumni, and the larger society outside of the school. Beginning 2001, CPE focused on conducting training workshops for teacher-educators including formal educators, community-based educators, and curriculum officers of ministries of education. With teacher-educators teaching hundreds of pre-service or prospective teachers each year, the teacher training workshops are a strategic move

because of its multiplier effect. In a monitoring survey that was conducted with two batches of participants at least six months after their training, the results showed that all the respondent teams were able to integrate peace education themes in various subjects in their Teacher Education curriculum.

The CPE's peace education training has also given birth to peace clubs in various schools throughout the country. These clubs have co-organized awareness-raising and advocacy activities (including visits to parliamentarians, and online campaigns) around peace-related events, e.g., International Day of Peace, Mindanao Solidarity Week and World Interfaith Harmony Week. It has also given birth to the establishment of Centers for Peace Education in other schools, the infusion of peace perspectives into the curricula, and the declaration of other schools in the country as Zones of Peace.

Knowing the importance of families in developing peaceful mindsets, values, and attitudes, the CPE with Miriam College's Family Studies program also launched Our Peaceful Classroom, an online space where parents, educators and other professionals come together to talk about ideas on how to promote positivity and peace within ourselves, our families, and communities.

The youth are often the target of mobilization for armed conflict and are often also the victims. Therefore, special efforts to involve them in processes of peace are crucial. Working with the youth emphasizes the long-term nature of peacebuilding. Peacebuilding needs a multiplicity of peacemakers and the youth definitely is a resource within a society that needs to be empowered to participate in the process.

An essential point that has to be made is that peace education is a critical response not only in a post-conflict scenario but also as a way of preventing violent conflict. It is because peace education teaches us to address the roots of conflict and encourages us to work for their

resolution and transformation through nonviolent ways. Peace education also encourages us to be more active and proactive in seeking ways for people to live together despite differences – with respect, justice and compassion toward all.

Peace Education Beyond The Classroom

The CPE's work is not confined to teaching peace. Peace educators need to engage with relevant government agencies because such collaboration (even if it is in a critical but constructive mode) is often fruitful. It is also important for local peace groups to work in solidarity with regional and global networks that give special attention to peace education. It is through this expanded networking that we can hope to put in place our vision of attaining a global culture of peace.

The Center engages with as many actors as possible, horizontally, with other peace groups, and vertically, government agencies, to enhance the impact of its work. Thus, the CPE is into advocacy specifically on arms control and disarmament, support for the peace processes, and women and youth's participation in peace and security.

Building Bridges of Friendship and Understanding: CPE's Twinning Project

Goal 16.b of the SDGs aims to promote and enforce non-discriminatory laws and policies for sustainable development with an indicator of the proportion of people feeling less discriminated against or harassed. At the Center for Peace Education, addressing this target comes in the form of our efforts to challenge prejudice and build tolerance, especially in a multicultural and multi-religious society like the Philippines.

A religiously plural society, Southeast Asia is home to believers of Islam, Buddhism, Hinduism, Jainism, Sikhism, Christianity, Judaism and tribal religions. According to Castro (2006), this diversity continues

to be used as a reason to mobilize people toward rivalry and even violence -- a significant challenge up to this day.[331]

There continues to be a rise in extremism and fundamentalist religious movements. An example is the creation of ISIS, a Sunni jihadist group with a particularly violent ideology that calls itself a caliphate and claims religious authority over all Muslims.[332]

In the Philippines, experiences of discrimination and marginalization of minority groups including indigenous peoples, and the Bangsamoro, the native Muslim inhabitants particularly in Southern Philippines, fuel armed conflicts. Misinformation, fear, and the lack of communication fuel the formation of biases, stereotypes, and prejudices.

Hans Küng, a renowned theologian, drew the conclusion that "there can be no peace among the nations without peace among religions; no peace among the religions without dialogue among the religions." (1991, as cited in Castro, 2006)[333] Interfaith dialogue and cooperation are critical components to peacebuilding, with an aim to open a space to improve communication, promote openness and trust, and enable an empathetic understanding of other religions. When education is used to seek peace and justice, it is a powerful tool that allows for interfaith dialogue and cooperation.

The CPE Twinning Project with a Public School Attended by Muslims in Mindanao

The CPE's Twinning Project seeks to create new relationships between two groups that have been divided by historical and

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[331] Castro, L.N, The Role of Education in Promoting Interfaith Cooperation, Northern Illinois University, 2006, page 1.

[332] RAND Corporation, *The Islamic State (Terrorist Organization)*, n.d., https://www.rand.org/topics/the-islamic-state-terrorist-organization.html

[333] Castro, L.N, The Role of Education in Promoting Interfaith Cooperation, Northern Illinois University, 2006, page 1.

geographical circumstances. Its theme is "building bridges of friendship and understanding" between two differing faiths and cultures. A bridge seeks to connect two places and enables easy access between those who live on both sides. This is the goal of the project: to connect two groups of youth that prior to the project have suffered from negative attitudes toward each other, to enable them to communicate and have meaningful encounters that can break the prejudices that divide them and, in its stead, build bridges of understanding.

Knowledge about and acquaintance with members of other groups make for tolerant attitudes and contacts that bring knowledge and acquaintance are likely to engender sounder and truer beliefs that may contribute to the reduction of prejudice (Allport, 1946 as cited in Castro, 2013).[334]

In the Philippines there have been countless reports of such prejudice, discrimination and exclusion, particularly against Muslims. Although it can be said that many Muslims in the Philippines also harbor negative stereotypes about the Christian majority, it is a fact that the latter's prejudices against the former are uglier, more serious and pronounced. Bias against Muslims and their socio-economic exclusion are among the underlying root causes of the conflict in Mindanao. In Castro's (2013) paper, "A twinning project between Muslim and Christian youth: An assessment", she cites that the Philippine Human Development Report 2005 recommended the building of a constituency for peace and that constituency must be built not only within the government but in the greater populace.

Historical circumstances have created and deepened prejudices between Christians and Muslims believers. Although the root of the armed conflict is not religious in nature, there are those who have used

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[334] Castro, L.N., *A twinning project between Muslim and Christian youth: An assessment (Conference presentation)*, Peace Practitioners Conference, Siem Reap, Cambodia, 2013.

religious differences to exacerbate the conflict. Generations of youth have been receiving negative messages about the other group, and this cycle has largely been perpetuated by fear of and ignorance about the other.

Armed conflict and displacement have disrupted thousands of people's lives in the conflict-affected areas in Mindanao for more than four decades. The armed conflict between the government (GPH) and the Moro National Liberation front (MNLF) as well as the Moro Islamic Liberation Front (MILF) has caused death, destruction and suffering to both combatants and non-combatants. The climate of distrust and prejudice was high in the early 2000s between Muslims and Christians, with the wars of 2000 and 2003, and complicated by the existence of criminal groups such as the Abu Sayyaf. This was the context when the Twinning Project was born. In 2004, there was an ongoing "formal peace process" between the GPH and the MILF and the Twinning Project was meant to accompany it with a so-called "people to people peace process."

The good news today is that the Bangsamoro Organic Law has been passed, and the region is already in a transition government. However the challenge of building bridges of understanding needs to continue. The long road to peace has just begun. The crucial step of building a peace constituency who will be supportive of peacebuilding goes on.

The Twinning Project is between Miriam College (MC), a Catholic school located in Metro Manila, and Rajah Muda High School (RMHS, now known as Rajah Muda National High School), a public school attended by Muslims located in Pikit, Cotabato, a conflict-affected area in Central Mindanao.

The Twinning Project's main goal is to enable the Muslim and Christian youth/ student-participants to develop beliefs, attitudes and actions that are peace-oriented, particularly those that break down the

barriers of prejudice between them. The project consists of exchange of letters, joint peacebuilding workshops and the publication of an annual joint newsletter named Pag-asa or "hope".

The Twinning Project enabled two youth groups to build friendships and initiate activities to promote peace and further understanding between two differing faith and cultural traditions,

One significant initiative of the RMHS students into the Twinning Project is the establishment of a Peace Club called "Suara No Kalilintad," a name in their native Maguindanaon language which can be translated as "Voices of Peace." In the case of the MC students, they organized short re-echoing seminars for their fellow students. A distinctive activity to which they contribute very actively, every year, is the annual celebration of the Mindanao Week of Peace/Mindanao Solidarity Week. The regular features of said week are awareness-raising activities and fund-raising to help their twin school, the RMHS, as well as to help Mindanao and peace-related causes.

Based on assessments conducted by the Center, there have been positive effects of the project on the participants' beliefs and attitudes which will hopefully stay with them and enable them to be agents of peace in their own spheres. Often mentioned is that of "aversion to war". Various reasons were given by those who mentioned this, including loss of life, disrupted education, hardships in evacuation centers, use of child soldiers, material destruction, among others. This is followed by the students' realization of their "role in building peace, including raising the awareness of others," and their conviction that "despite their differences, Muslims and Christians can be united and can help each other in promoting peace." These most frequently mentioned items are a fertile ground from which other peace-related attitudes and actions can spring.

Arm in Arm against Illicit Arms: Peacebuilding and Disarmament

A major component of peace building is securing safe spaces and dismantling tools that promote violence. Every year throughout the world armed violence kills around 526,000 people and more than 75 percent die in non-conflict settings (IISS, 2015 as cited in Nario-Galace, 2018).[335] Roughly 500 people in the world are killed because of violence committed with firearms.[336] Armed violence also triggers displacement. According to UNHCR, there were 65.3 million people who were forced to flee their homes in 2015 or an average of 24 people fleeing from home each minute.[337]

According to a fact sheet published by Reaching Critical Will, the cost of war continues to balloon in recent times. The military-industrial complex absorbs vast amounts of funding that could otherwise be spent on human security, including the achievement of the Sustainable Development Goals. Funds reserved for development initiatives are increasingly spent on emergency relief and rehabilitation operations to clean up after violent conflict.[338]

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[335] Nario-Galace, J, *Women Controlling Arms, Building Peace: The Case of the Philippines*, The Oxford Handbook of Women, Peace, and Security, 2018.

[336] Amnesty International, *Gun Violence - Key Facts*, n.d., https://www.amnesty.org/en/what-we-do/arms-control/gun-violence/

[337] Edwards, A., *Global forced displacement hits record high*, UNHCR Asia Pacific, 2016, https://www.unhcr.org/news/latest/2016/6/5763b65a4/global-forced-displacement-hits-record-high.html

[338] Reaching Critical Will, *Military Spending*, n.d., https://www.reachingcriticalwill.org/images/documents/Resources/Factsheets/military-spending.pdf

Illicit Arms in the Philippines

The illicit trade and proliferation of loose firearms and weapons continue to be a key issue of peace and security in the Philippines. Small arms proliferation enabled and sustained the two major armed conflicts in the country. The supply of guns also allows for the formation of private armed groups (PAG) which enable political dynasties to perpetuate themselves in power.

In 2014, Filipinos owned an estimated 3.9 million firearms with some 2.1 million illegal.[339] Current laws in the country do not help in regulating the proliferation of small arms. Republic Act No. 10591 allows a citizen to own and possess a maximum of 15 registered firearms and more than 15 if the citizen is a certified gun collector. The law also exempts a long list of professionals from applying for a permit to carry their guns outside of their homes.[340]

Peace in Action: Disarmament Education and Advocacy

The CPE gives a premium to disarmament education to challenge militarism and prevent armed conflict and armed violence. Disarmament education seeks to be a countervailing force against the dominant militarized mindset that has made states and people rely on the possession of more and more sophisticated weaponry rather than on investing their resources on the fulfillment of basic human needs and on

[339] International Alert, *Where do illegal guns in the Philippines come from?*, n.d. https://www.international-alert.org/news/where-do-illegal-guns-philippines-come

[340] Official Gazette of the Philippines, *Republic Act No. 10591: An Act Providing For A Comprehensive Law on Firearms And Ammunition And Providing Penalties for Violations Thereof*, 2013, https://www.officialgazette.gov.ph/2013/05/29/republic-act-no-10591/

the development and promotion of nonviolent alternatives and processes.[341]

UN Secretary General Antonio Guterres' "Agenda for Disarmament: Securing Our Common Future" underscores the catalytic role youth play in security and disarmament and calls for empowering the young generation as the ultimate force for change.[342] CPE has always actively involved students in its advocacy work. Students lead on and offline campaigns, have spoken to parliamentarians and senators in congress, and organized mobilizations for disarmament and arms control.

In both UNSCR 2250: Youth, Peace and Security and the UNODA's Youth for Disarmament Agenda, young people's meaningful participation, and the creating spaces both on and offline for the youth to make meaningful substantive contributions can help facilitate the progress on disarmament.

The Center's disarmament work directly contributes to the fulfillment of SDG 16.4 - significantly reducing illicit financial and arms flows – at policy level. The changes brought about by the Covid-19 pandemic has made it clear that it is important to continue lobbying governments to put back the issue of armed violence and disarmament in their national agenda. Despite the lockdown in 2020, millions worth of arms exports to conflict-affected countries continue despite the shortage of medical supplies.

Gender and Disarmament

Weapons play a central role in putting women's security at risk. The International Action Network on Small Arms (IANSA) Women's

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[341] Castro, L. and Galace, J, *Peace Education: A Pathway To Peace (3rd Edition)*, Quezon City: The Center for Peace Education-Miriam College, 2019, page 108.

[342] Office for Disarmament Affairs, *Securing Our Common Future: An Agenda for Disarmament*, page 67.

Network posits that the primary weapon holders, users and traders as well as majority of victims of death may be men but women suffer as well the consequences of weapons proliferation. Weapons, guns in particular, have been used to facilitate rape, sexual abuse and domestic or intimate-partner violence (Lyddon, 2011 as cited in Nario-Galace, 2018).[343]

Women also count largely among those who are caught in the crossfire and make up the majority of the displaced. As cited in Nario-Galace (2018), the Philippines, 68% of gun violence against women reported in 2007 in the Philippine Star, a local print and digital newspaper, were cases of rape. And while women may not be the primary weapon users in the country, they suffer from violence in the home or on the streets with the aid of guns.

It is important to recognize the changing nature of warfare, one that increasingly harms non-combatants. The Center for Peace Education, therefore, works towards specifically advocating for gender-responsive policies on arms control and disarmament.

Advocating for a Responsible Arms Trade

SDG16.4's goal is the significant reduction of illicit financial and arms flows, strengthen the recovery and return of stolen assets and combat all forms of organized crime.

CPE is an active part of international coalitions working on arms control and disarmament. It takes part in meetings in the UN and with civil society groups around the world to advocate for then the adoption and now the implementation of the Arms Trade Treaty (ATT), UN Programme of Action on Small Arms and Light Weapons (UNPoA on

[343] Nario-Galace, J, Women Controlling Arms, Building Peace: The Case of the Philippines, The Oxford Handbook of Women, Peace, and Security, 2018.

SALW), and the Treaty for the Prohibition of Nuclear Weapons (TPNW).

The Center is an active member of the International Action Network on Small Arms (IANSA), a global movement working to stop gun violence particularly from Small Arms and Light Weapons (SALW). The movement monitors governments' commitments to the UN PoA on SALW, a politically binding instrument adopted by consensus in 2001 seeking to reduce the human suffering caused by the illicit trade in small arms. The International Tracing Instrument, a politically binding instrument outlining requirements on marking, record-keeping, and international cooperation and assistance that will enable tracing illicit small arms and light weapons.[344]

Part of the UN PoA is the voluntary submission of national reports which include information on states' implementation of the PoA.[345] As a member of IANSA Women's Network, focused on the gender implications of gun violence, the CPE, through IANSA, suggested to the United Nations Office of Disarmament Affairs (UNODA) the inclusion of gender considerations in the national reporting questionnaire, which UNODA reflected as follows:

10.1 Does your country take into account gender considerations?

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[344] United Nations Office for Drugs and Crime, *International Instrument to Enable States to Identify and Trace, in a Timely and Reliable Manner, Illicit Small Arms and Light Weapons*, 2005, page 2.

[345] Parker, S. and Green, K., *A Decade of Implementing the United Nations Programme of Action on Small Arms and Light Weapons,* Geneva: United Nations Institute for Disarmament Research, 2012, page 3.

10.2 Does your country collect disaggregated data on gender and SALW?[346]

CPE is an active member of IANSA, organizing local initiatives of global efforts by the network such as the Global Week of Action Against Gun Violence, Wear Orange Campaign Against Gun Violence, and more. The Center also represents the network in the Review Conference and Biennial Meeting of States on the UNPoA at the United Nations.

From the Center's membership in the IANSA Network, CPE extended its campaign work for arms control by joining the Control Arms coalition. Control Arms is an international campaign to reduce armed violence and conflict through international arms control. It is a coalition of members of civil society, academia, and individuals across the world that campaigned for the creation of the Arms Trade Treaty (ATT), a binding treaty on the global arms trade. The ATT aims to establish the highest possible common international standards for regulating or improving the regulation of the international trade in conventional arms with the purpose of reducing human suffering.

The Center's participation during the ATT negotiations proved critical. CPE was one of the main campaigners from the coalition that actively lobbied for the inclusion of the text on Gender-Based Violence (GBV). This text was adopted in the final version of the treaty, and is under the risk assessments requirement of Arms Trade Treaty states parties:

Article 7.4: The exporting State Party, in making this assessment, shall take into account the risk of the conventional arms covered under Article 2 (1) or of the items covered under Article 3 or Article 4 being

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[346] IANSA and WILPF, *Room for Improvement: An analysis of "gender considerations" in the 2020 Programme of Action national reports,* 2021, pages 3-4.

used to commit or facilitate serious acts of gender-based violence or serious acts of violence against women and children.[347]

The inclusion of this line of gender makes the ATT the first legally-binding international regime to acknowledge the link between the international arms trade and GBV. The Center for Peace Education continues to be an active Asia-Pacific and gender campaigner for the coalition during the Conference of States Parties to the ATT and the UN General Assembly First Committee; representing civil society in national meetings with the Office of the Special Envoy on Transnational Crime, the office fostering the ATT in the Philippine government.

Campaigning for Disarmament: Weapons of Mass Destruction

The CPE is also the Philippine campaigner for the International Campaign to Abolish Nuclear Weapons (ICAN). ICAN is a coalition of non-governmental organizations that campaigned for the passage, and is now promoting adherence to the Treaty on the Prohibition on Nuclear Weapons (TPNW), or the Nuclear Ban Treaty. The TPNW is the first legally-binding international agreement to comprehensively prohibit nuclear weapons with the ultimate goal being their total elimination.

In 2013, the Center was invited to be a partner organization to the campaign, and thereafter became part of the civil society representatives in the negotiation conferences held in Norway, Mexico, and Austria. These conferences focused on the catastrophic humanitarian consequences of nuclear weapons should they be detonated internationally or accidentally. The TPNW was adopted in 2017, and opened for signatures from UN Member States. It entered into force on 22 January 2021.[348] On February 1, 2021, the TPNW was ratified by the

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[347] United Nations, *The Arms Trade Treaty,* 2014, page 6.

[348] International Campaign to Abolish Nuclear Weapons, *The Treaty*, n.d., https://www.icanw.org/the_treaty

Philippines and the CPE took a leading role in campaigning for this ratification by organizing groups to lobby for it. This role was acknowledged by ICAN and the country's Department of Foreign Affairs.

CPE's Disarmament Efforts within the Philippines

The Center for Peace Education works closely with the Office of the Special Envoy on Transnational Crime, lobbying for the ratification of the Arms Trade Treaty signed in 2013, and the fulfillment of the country's commitments to the UN Programme of Action on Small Arms and Light Weapons. Though unsuccessful, the Center has lobbied for the amendment of the gun law which allows ownership of up to 15 guns and allows almost every Filipino citizen to carry these guns in public without a permit.

The Center has organized public actions, in-person and online lobbying, education sessions, public actions, and other activities to help control arms proliferation and irresponsible use of these weapons. Awareness-raising efforts go beyond the campus and involve the general public. The CPE has written op-ed articles for print media, organized events for the Nuclear Abolition Day and Wear Orange Day activities, initiated and supported petitions for arms control, and conducted Disarmament Education workshops and capacity-building activities to empower local communities to take action against arms proliferation and violence.

The Center's engagement with the Department of Foreign Affairs, the legislature, and pertinent offices on the government's executive branch has also helped see through the country's signing of the Arms Trade Treaty (2013) and the ratification of the TPNW (2021).

By advocating for the Philippines' ratification of the Arms Trade Treaty, and strong commitment and implementation of the UN PoA and TPNW, the Center not only works to curb the illicit flow of arms and

armed violence in the country, but also works to build a norm that does not glorify weapons. Engagement on these issues on peace and security raise awareness within stakeholders in the government, trade and arms industries of the humanitarian issues tied to the arms trade, and that young people, students, and civilians are keeping a close eye on the accountability of stakeholders on these weapons.

Interventions on Key Peace and Security Issues: Preventing Violent Extremism

Violent extremism remains to be one of the rising concerns affecting international and local security. The growing rise of extremist ideologies, implemented through acts of terrorism such as suicide bombings have grappled the Philippines in the past years. While there is no universally agreed definition of the term 'violent extremism', according to the UN Office of Drugs and Crime:

What may constitute what 'violent extremism' has, to some extent, been shaped by the activities of terrorist groups such as Islamic State of Iraq and the Levant (ISIL), Al Qaeda and Boko Haram, which spread messages of hate and violence as well as religious, cultural and social intolerance. In doing so, groups engaged in violent extremism often distort and exploit religious beliefs, ethnic differences and political ideologies to legitimize their actions as well as to recruit and retain their followers.[349]

In the Philippines, homegrown terrorist groups such as the Abu Sayyaff, Bangsamoro Islamic Freedom Fighters, and Maute Group, among others, have evolved and consequently adopted ideologies

[349] United Nations Office on Drugs and Crime, *Module 2: Conditions Conducive to the Spread of Terrorism*, 2018, https://www.unodc.org/e4j/en/terrorism/module-2/key-issues/radicalization-violent-extremism.html

espoused by regional and global terrorist organizations. According to Franco (2020), these local terrorist groups have also affiliated themselves with the known terrorist regional groups such as the Jemaah Islamiyah, and international terrorist group ISIS/Daesh.[350] The presence of these groups in Mindanao have made the third largest island in the Philippines host to recurring and protracted conflict.

According to Franco (2020), longitudinal study suggests that occurrence of conflict is predicted by disparities in access to resources, education, and other security issues such as clan feuding, local political conflicts, and weak governance. Illicit trade and the "shadow economy" in Mindanao remain to be a key factor generating conflict and competition between local armed groups.

Factors that push and enable the context of radicalization include poverty and economic hardship; ethnic and religious marginalization; and frustration with the government. According to RAND Corporation's 2020 report entitled, "Countering Violent Extremism in the Philippines":

Various extremist groups have been in on-and-off negotiations with the government over the status of Mindanao. The lack of an arrangement for an independent, Muslim Mindanao that satisfies all parties to the conflict has been a major grievance and driver of radicalization.

According to Rhoades & Helmus (2020) what pulls recruitment are active recruitment through material incentives, in-person networks, and online propaganda. Potential recruits, e.g., impoverished youth, join as a means of providing for themselves and their families. According to an interview for a study conducted with former members of the Maute Group, responsible for the Marawi Siege in 2017, recruiters offer a regular salary between PHP 20,000 to 50,000 -- about USD 400-1,000

[350] Franco, J., *Peripheral Vision: Views from the Borderlands (Fall Bulletin)*, X-Border Local Research Network, 2020, page 1.

(as cited in Rhoades & Helmus, 2020).[351] Uneducated youth and school dropouts who are susceptible to radical ideologies and are promised to be provided with an Islamic education with no moderate Islamic education to challenge radical teaching, are the new targets for recruitment.

In 2018, the Philippines started the process of drafting its National Action Plan on Preventing Violent Extremism acknowledging the need for a whole-of-nation, multidisciplinary, and holistic approach on the growing issue. Conducted through consultation across the country, the Center for Peace Education-Miriam College participated, acting as a facilitator in these drafting workshops, and supporting the review and refinement of interventions.

Commissioned by UN Women Asia-Pacific, CPE helped draft a complementary manual entitled, "Implementing Gender Provisions: National Action Plan on Preventing Violent Extremism in the Philippines". This guide has been designed to be used as a resource to help ensure gender-sensitive and gender-responsive implementation of the NAP. The guide has been published in 2019 and is accessible through the UN Women Asia-Pacific website.

Participation in key policies influencing peace processes in the country has been a strategic practice of the Center to ensure that efforts for peace are inclusive, participatory, and rooted in nonviolence. It enables for the assurance of inclusion of gender sensitive and gender responsive policies. This setup also encourages strong partnership between the security sector, government, academe and civil society through indispensable contributions towards a holistic localization.

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[351] Rhoades. A. and Helmus, T., *Countering Violent Extremism in the Philippines,* California: RAND Corporation, pages 23, 26.

Helping Women Count: Women, Peace and Security

The passage of UNSCR 1325, the Women, Peace and Security Agenda in 2000 reaffirmed the indispensable role of women in the matters of conflict resolution, peacebuilding, peacekeeping, among other peace efforts. Comprising half of the total population of the world, women's perspectives, and experiences in peace and conflict cannot be discounted. The WPS Agenda significantly pushes for women to be more involved in formal roles in peace processes, and to bring a gender-lens to the discourse around peace and security.

Sexual violence continues to shadow armed conflict. In a conflict situation, insecurity and fear of being victims of rape and sexual abuse increases. Used as a tactic of war, sexual violence encompasses rape, forced prostitution, sexual slavery, forced pregnancy or sterilization, or any other form of sexual violence of a comparable gravity (ICRC, 2016).[352]

A culture of silence towards reporting is also enabled from the reluctance to report due to cultural considerations, such as the avoidance of bringing dishonor and shame to women's families or communities. In the Philippines, rape victims or survivors remain reluctant to report or file complaints against their perpetrators because of stigma and the embarrassment and trauma of recalling their ordeal to authorities (Flores & Diaz, 2010).[353]

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[352] International Committee on the Red Cross, *Q&A: sexual violence in armed conflict*, 2016, https://www.icrc.org/en/document/sexual-violence-armed-conflict-questions-and-answers

[353] Flores, H., and Diaz, J, *9 women raped daily in RP in 2009*. Philippines: Philstar Global, 2010, https://www.philstar.com/metro/2010/02/23/551776/9-women-raped-daily-rp-2009

UNSCR 1325: Women, Peace and Security

In Asia, the Philippines was one of the pioneer countries to create a National Action Plan on the agenda. The CPE as a member of Sulong CARHRIHL (Comprehensive Agreement on Respect of Human Rights and International Humanitarian Law), co-initiated the formulation and adoption of the first Philippine National Action Plan (NAP) on Women Peace and Security. It worked with government agencies and women and peace organizations throughout the country to develop the NAP. The NAP on 1325 is meant to increase women's participation in decision-making processes that relate to conflict prevention, conflict resolution, peacekeeping and peacebuilding.

Women's voices are normally not heard in these processes and mechanisms when they make up half of the world's population and can offer unique perspectives. CPE co-organized and co-facilitated the consultations from Kalinga to Marawi, co-wrote the plan, and saw through its completion and adoption as a government executive order. That whole process took more than three years.

To ensure implementation of the NAP, the women from civil society who collaborated to write and launch the NAP formed the Women Engaged in Action on 1325 (WE Act 1325), a loose network of women and peace groups throughout the country. The CPE served as its first Coordinator and Secretariat.

In an essay it contributed to the Journal of Social Encounters Vol 5, Issue 2 (2021),[354] CPE outlined a few of the achievements by civil society in implementing the NAP:

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[354] Nario-Galace, J., *Women Count for Peace and Security: A Story of Collaboration in the Philippines*. The Journal of Social Encounters: Vol. 5: Iss. 2, 59-65, 2021.

Localization of the Philippine National Action Plan on WPS

From 2011 – 2016, the Global Network of Women Peacebuilders (GNWP) and the Women Engaged in Action on 1325 conducted a series of Localization of 1325 workshops that resulted in the adoption of local resolutions, ordinances, and Local Action Plans (LAPs) in some municipalities in the country affected by various kinds of conflict. The Localization of 1325 is a bottom-up strategy for the effective implementation of UNSCR 1325 and the supporting Women, Peace and Security resolutions at the local level.

The Localization strategy enabled local government officials, security sector, community women, the religious sector, indigenous peoples, and members of the academe to work together to adopt provisions of the PNAP as local legislations and policies. LAPs included the allocation of seats for women in local special bodies particularly peacekeeping and human rights mechanisms; funding legal, economic, educational psychosocial support and spiritual services for women and girl survivors of conflict, and provision of emergency and livelihood assistance to children and women victims of armed conflicts (Maligalig, 2016).

The Localization of 1325 in the Philippines, supported by the Norwegian Agency for Development Cooperation (Norad), also paved the way for the inclusion of women in age-old village decision-making platforms that traditionally did not include women. The Matagoan Bodong Consultative Council, a Council of Elders in Northern Philippines, for example, began to include women in the decision-making body breaking what used to be a glass ceiling.

Increased Women's Participation

Monitoring on women's participation in decision-making processes made by civil society in partnership with GNWP and Norway indicated a significant increase in the number of women in senior decision-making

positions in the executive branch of government from 2010-2012 (WE Act 1325, 2012). WE Act 1325 (2014) also noted significant progress in the percentage of women in the security sector and peace negotiating teams from 2013-2014 while moderate progress was noted in the number and percentage of women participating in constitutional legislative reviews including security sector reviews and the justice sector.

Promotion of Gender Perspective

The monitoring report made by WE Act 1325 (2014) in partnership with GNWP and with the support of Norad also saw significant progress in the detailed breakdown of gender issues addressed in peace agreements. It also noted significant progress in the number of CSOs in task force/committees on UNSCR 1325 and 1820 and in the number and quality of gender-responsive laws and policies. Such an increase was also observed in the number and percentage of pre-deployment training and post-deployment programs for military and police incorporating UNSCR 1325 and 1820, international human rights instruments, and international humanitarian law.

Operationalizing the NAP in the Security Sector

Partnership efforts between WE Act 1325 and GNWP paved the way for the operationalization of the NAP in the plans, programs, and activities of the Philippine National Police and the Philippine Army. Nario-Galace and Viar (2015) reported that various civil society-organized WPS trainings in the Police resulted in the incorporation of NAP provisions in its 'PATROL PLAN 2030 or the PNP Peace and Order Agenda for Transformation and upholding the Rule of Law. The Philippine Army, meanwhile, published and implemented several policy directives promoting gender equality in training assignment, utilization, career path and promotion of female military officers. More women

members of the Army are now deployed as civil-military relations staff working on community-based peace and development initiatives in conflict-affected areas. Both PNP and the Philippine Army integrated WPS in their Gender and Development Plan and Budget. (Nario-Galace and Viar, 2015)[355]

Gender-Responsive Bangsamoro Law

Supported by the UK Embassy in Manila and Conciliation Resources, WE Act 1325 members organized and conducted several consultations to know what women from communities wanted to be included in the law. Results of consultations were put together and crafted as lobby points. To ensure the integration of gender perspectives in the Bangsamoro law, advocacy trainings were organized to help women come up with strategies and activities to push for women's meaningful participation in the Bangsamoro. These lobby points were taken to members of Congress and the members of the government and Moro Islamic Liberation Front (MILF) peace negotiating teams.

It participated, organized, and co-organized several public actions to push for provisions in the law that will uphold women's right to participation and leadership in decision-making and peace and security processes. The lobby points that WE Act 1325 pushed came from its consultations with thousands of community women affected by conflict. The efforts have not been futile. The document submitted by the BTC to the Office of the President contained language affirming women's meaningful participation, as cited in Nario-Galace (2021). The Bangsamoro Organic Law signed in July 2018 has provisions for the participation of women in the Bangsamoro Cabinet and other mechanisms (GNWP, 2019 as cited in Nario-Galace, 2021) as well as

[355] Nario-Galace, J. and Viar, I, *We act 1325: Women preventing war, building peace*, Unpublished report, 2015.

provisions for their meaningful participation in the conceptualization and implementation of development programs and projects.

Enhanced Capacities for Leadership and Participation

Women in communities affected by armed conflict were trained on skills necessary for meaningful participation. With support from the Australian and Canadian Governments, women were trained on advocacy, public speaking, conflict prevention, conflict resolution. and mediation skills. Capacities were also enhanced concerning political participation in the Bangsamoro where women were trained on political platform development, winning elections, and resource mobilization. In the elections that followed the training, some of the women threw their hats into the election ring. Some won, some lost. But what really won was their ability to conquer their fears and demystification of the belief that only men belong to the public sphere.

WPS and Arms Control

In the same consultations for the National Action Plan, participants validated the security threats brought about by the illicit trade and presence of small arms and light weapons (SALW) in the Philippines. Guns were identified as enablers of armed conflict and tools that empower and sustain armed groups. Thus, mechanisms to regulate the transfer and use of SALW, a tool of violence in armed conflict, was included under the action point of the National Action Plan to "Develop, enact, and implement policies that ensure protection and security for women affected by armed conflict."

The inclusion of the language of arms control created and raised consciousness that arms control is necessary to protect women's rights and prevent violence. This also opened a space for the role women can play in addressing the impact of arms proliferation at the community level, given its disproportionate impact on them while connecting it to a

larger framework on their meaningful participation in peacebuilding and conflict transformation.

This inclusion proved an important tool in lobbying engendered policies such as UN PoA, Arms Trade Treaty, and national Firearms legislation. It was also helpful in calling attention of policymakers to the link of women and armed violence

WePeace

The CPE continues its work with women on the ground. In 2019, a nationwide training for women's peacekeeping with the Center's long-standing partners had been conducted in four provinces across the country through the program, the Women's Agency in Keeping the Peace, Promoting Security, or WePeace.

WePeace is a localization of the WPS Agenda promoting horizontal peace while simultaneously supporting the WPS Agenda's pillar of participation. Conducted through a capacity-building training, each area had about 15-20 women participants per area, chosen and nominated by CPE's partner organizations.These training sessions reached 83 community women leaders from four distinct communities addressing four different conflict lines: (1) clan wars, locally called "*rido*" in Aleosan, North Cotabato; (2) internal displacement in Surigao del Sur; (3) tribal wars in Tabuk City, Kalinga; (4) and development aggression, in the form of development projects that violate indigenous peoples' rights, in Infanta, Quezon Province.

The conception of WePeace was inspired by the experience of women peacekeeping teams from Bontoc, Mountain Province and Lagawe, Ifugao, which are provinces of the Cordillera Administrative

Region (CAR), whose population is largely composed of closely related indigenous peoples (IPs).[356]

The Bontoc Women's Brigade from Mountain Province, conduct peacekeeping by ensuring the strict compliance to ordinances on drinking bans and local curfew. They have been an active women peacekeeping group supporting the Philippine National Police (PNP) and barangay councilors since 2001. In the neighboring province of Lagawe, Ifugao, another all-women peacekeeping team also conducts nightly rounds in specific areas to ensure compliance and implementation of drinking bans and local curfews.

The WePeace training were accompanied with modules, written by the 12-women training team composed of peacebuilders with different expertise from government, academe, civil society, religious, and indigenous groups. These modules have been compiled in a 2019 outcome document, *At the Frontline: Women Peacekeepers in the Philippines* which has been distributed to the participants and partners to use should they want to do training with other community members. A full-length documentary, *Sparks of Peace: Women Peacekeepers in the Philippines* was also produced documenting the beginnings of the Philippines' National Action Plan on Women, Peace and Security in 2010; women and peacebuilding at the grassroots level; and stories of the women of WePeace from Kalinga, Quezon Province, North Cotabato, and Surigao del Sur.

The production of learning materials, in this case the modules and documentary for WePeace, ties efforts of awareness raising of SDG 16 at the same time promoting peace and security issues through quality education (SDG 4). The Center consciously produces materials that can

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[356] Cordillera Peoples Alliance, *The Cordillera: Its land and people*, 2006, https://www.cpaphils.org/cordillera.htm#targetText=A%20big%20bulk%20of%20the,Ibaloy%2C%20Ifugao%2C%20and%20Bago

be used by audiences beyond the communities we work with. For example: together with the premiere of the documentary, the Center prepared an official programme offering background information and guide questions to help audiences process and dive deeper into the realities and situations raised by the women in the documentary.

Gains: Beliefs and Attitudinal Change

The approach of the localization of the Women, Peace and Security Agenda through education and training challenges associations among violence, power, small arms, and masculinity. Training helps change the participants' view on what is necessary in providing personal and community security. It enables a new perspective on their perceived roles in the homes and community.

In the case of gender and disarmament in the PNAP-WPS, significant differences were found in the youth's beliefs and attitudes towards arms control prior to and after training. After the training, the youth's belief that peace and normalcy will be more possible if arms were reduced, their proliferation controlled, and armed groups disbanded improved significantly (Nario-Galace, 2018).[357]

In testimonies documented in the 2019 publication, "At the Frontline: Women Peacekeepers in the Philippines," participants from WePeace pointed out that by participating in community peacebuilding and peacekeeping, the entire community's perception on women's participation is challenged as well. One participant shared that she has witnessed people who have been resistant to slowly participating in more and more peacebuilding activities.[358]

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[357] Nario-Galace, J, Women Controlling Arms, Building Peace: The Case of the Philippines, The Oxford Handbook of Women, Peace, and Security, 2018.

[358] Pabotoy, A., *At the Frontline: Women Peacekeepers in the Philippines*, Quezon City: The Center for Peace Education-Miriam College, 2019, page 58.

Challenging associations of weapons, masculinity, peace and security requires a commitment to gender equality and prevention of gender-based violence. This can be done through peace, gender, and disarmament education, and other programs that educate on gender norms and that promote tolerance, nonviolent expressions of masculinity, gender equality, and nonviolent resolution of conflicts.

By using the nationwide consultation as a key guideline to the Philippines' WPS localization, other key issues beyond peacebuilding, such as this multiple-lens approach to key issues is a key example of the synergies amongst the Sustainable Development Goals 16 on Peace and Strong Institutions, 4 on Quality Education, and 5 on Gender Equality.

Amplifying the Voices of the Young: Youth, Peace and Security

In 2016, an estimated 408 million youth (aged 15–29) resided in settings affected by armed conflict or organized violence.[359] With conflict and humanitarian crises becoming protracted, young people are on the receiving end of the cost of the conflict, and with warfare and weapons evolving into becoming more difficult to recover from, leaving communities devastated, young people are at the heart of living through economic, health, and environmental crises. But young people have also proven a resilience and power for change like no other. Global movements that have shaken and challenged governments and industries, such as the International Campaign to Abolish Nuclear Weapons and the Youth Strike 4 Climate, are all composed and led by young people.

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[359] Hagerty, T., *Data for Youth, Peace and Security: A summary of research findings from the Institute for Economics & Peace,* Institute of Economics and Peace, 2017, page 2.

In the Philippines, young people have been at the forefront of initiatives for peacebuilding. Young people are organizers of humanitarian response through efficient and highly organized calls for and distributions of donations to relief responses for victims of natural hazards. Young people are trainers of capacity building programs for different advocacies such as peacebuilding, climate change, gender equality, and human rights. Thus, young people cannot be left out of the table of peacebuilding and security. They have always been key players in driving sustainable change forward, and stakeholders of the gains of negotiations and agreements made today.

In 2015, the UN Security Council adopted the Youth, Peace and Security Agenda recognizing that "young people play an important and positive role in the maintenance and promotion of international peace and security." In his 2018 UNSCR 2250 progress study presented to the Security Council, UNSG Antonio Guterres stated, "many young people are frustrated by the tendency of their Governments and international actors to treat youth as a problem to be solved, instead of as partners for peace."

UNSCR 2250 identifies participation, protection, prevention, partnerships and disengagement, and reintegration as the five key pillars for action. The agenda urges Member States to give space for young people to meaningfully participate in peace processes. As SG Guterres emphasized: "For peace and security policy and programming to be effective, it is essential to understand how the experiences of young people vary over time in response to changing social, political and cultural landscapes." Young people's voices and perspectives cannot be left out if we want long-lasting peace.[360]

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[360] Guterres, A., *Identical letters dated 2 March 2018 from the Secretary-General addressed to the President of the General Assembly and the President of the Security Council*, United Nations, 2018, pages 3-4.

The CPE has always championed giving young people, especially young women, the space to participate in peacebuilding efforts and campaigns. Peace education does not only mean learning within the confines of a classroom. Peace education involves empowering young people to express their ideas, and find cooperation with different leaders in society and amongst each other, in order to eliminate violence and build sustainable peace in our individual lives, communities, and societies.

Youth, peace and security cannot be disconnected from the 2030 Agenda for Sustainable Development. As a partner to the Global Network of Women Peacebuilders, CPE was the implementing partner of the Young Women+ Leaders for Peace in the Philippines.

Young Women+ Leaders for Peace

Active in five countries, the Young Women Leaders for Peace (YWLP) helps young women and girls gain the skills and build confidence to become leaders in their communities. Since 2014, the program has reached over 7,000 young women and girls driven by the reality that when their leadership and peacebuilding potentials are realized, they are a positive force that transforms communities and societies for the better.[361]

In the Philippines, YW+LP started in 2018, then called the Girl+ Ambassadors to Young Women Leaders, with the initiative to organize a youth training on women, peace and security and its intersection with human rights and the media. Unique only to the Philippines, the "+" symbol signifies the inclusion of male allies and members of the LGBTQIA+ in the network.

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[361] Global Network of Women Peacebuilders, *Developing the Leaders of Today and Tomorrow*, n.d., https://gnwp.org/what-we-do/young-women-leaders-for-peace-program/

A Growing Network of Young Women Peacebuilders

The main output of the 2018 Girl+ Ambassadors to Young Women Leaders training was a social media plan that promoted accountability to gender equality, women's rights, human rights, and peacebuilding policies. This was then followed by the formation of the Girl+ Ambassadors for Peace Network – a network composed of young women leaders from different provinces in the Philippines, engaged in different sectors, offering different perspectives to approaching peace and peacebuilding. The network was the avenue for the youth to engage not just with the members of their organizations and localities, but the Philippines as a whole in upholding these principles through the use of social media.

In 2019, the Girl+ Ambassadors for Peace changed its name to the Young Women+ Leaders for Peace. Continuing the momentum in 2018, members in the Mindanao region conducted a campaign on the plebiscite of the Bangsamoro Organic Law. A 2019 Training of Trainers was also organized, led by GNWP. This training concluded with proposals of community-focused youth discussions on electoral education in time for the Philippines' national midterm election happening in the same year. Implemented across all three major island groups in the country, these discussions were organized to ensure that youth continue to play an active role in the narrative of sustainable peace.

COVID-19 and YW+LP

The Covid-19 pandemic brought adjustments and restrictions to the face-to-face community outreach. YW+LP Philippines rose to the challenge organizing various social media campaigns and online training which responded to the many social issues in 2020. Offline, members in areas where possible, distributed humanitarian aid.

Beneficiaries include young women and men, children, internally displaced mothers, women vendors, and low-income families impacted by the global health crisis. Interventions include psychosocial activities, and distribution of hygiene and safety kits, educational kits and healing packages. The interventions were coupled with an awareness campaign on COVID-19 prevention. All projects are implemented by the YW+LP Members across the Philippines with funding from the Global Network of Women Peacebuilders.

Towards the 2030 Agenda

Through the years, the Center for Peace Education-Miriam College has consciously aligned its work with local and international efforts on peacebuilding and participation, applying a holistic and synergized approach to all its projects and programs. Establishing partnerships with other organizations and experts working on key issues on peace, education, disarmament, gender, and youth, among others, allows the CPE to approach peacebuilding in a holistic and inclusive manner.

This reinforces the need to invest in synergies among different efforts, agendas, and policies from top to bottom. The decisions and commitments made by world governments in the UN will not reach local grassroots communities, who need it the most, if other key issues related to it are ignored.

Has the Sustainable Development Goal 16 to 'Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels' been achieved these past years since the SDGs were adopted? If thousands of peace and related-organizations all around the world continue their efforts and are accompanied by governments' political will, then the answer will be closer to the affirmative.

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13

SOUTH AFRICAN BUSINESS SCHOOLS SDG INTEGRATION –MBA CURRICULA, RESEARCH, AND PARTNERSHIPS.

Jacobus H Oosthuizen

Keywords

MBA; Business School; Sustainable Development Goals (SDGs).

Abstract

Business schools have an important role to play in developing future leaders of business and industry, and more specifically, to encourage the emergence of socially responsible behaviour in companies whilst simultaneously enhancing corporate performance. Unfortunately, business schools are facing criticism regarding the capabilities they claim to impart. Among this criticism are views of business schools failing to impart suitable skills, prepare leaders, or instil norms of ethical behaviour; that business schools have historically inculcated depraved values contributing to the unethical behaviour visible in most corporate boardrooms and public policy formulation. Many are of the view that business schools give too little attention to ethics and values-based leadership, and that more need to be done in terms of ethics and socially responsible leadership and behaviour.

In 2007, the Principles for Responsible Management Education (PRME), an UN-supported initiative, was founded to raise the profile of sustainability in schools around the world through Six Principles to which business schools commit to ensure they provide future leaders with the skills needed to balance economic and sustainability goals, while drawing attention to the Sustainable Development Goals (SDGs). If South African business schools pursue the objective of building intellectual capital for the country and industries, and providing knowledge relevant to sustainable business management practice, demonstrable commitment to the SDGs in relation thereto should be paramount. The question then beckons to what extent South African Business Schools integrate the SDGs into MBA curriculua, research, and partnerships. By running the information of South African business schools' mission, vision, values, and MBA curricula found in the public domain through the "LinkedSDG" application, this paper sets out to answer this question. The application extracts key concepts related to sustainable development from text documents and linking them to the most relevant sustainable development goals, targets, indicators, and series. The aim of the investigation is to highlight the SDGs with limited foci by SA business schools, and to propose recommendations for improving SA business schools SDG Integration into MBA curriculum, research, and partnerships.[*]

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Introduction

The Master of Business Administration (MBA) degree is a widely sought-after qualification for career progression and personal growth (Herrington, 2010:63), and regarded as an important differentiator in a crowded employment market (Herrington, 2010:75). Globally, the MBA remains in high demand as evidenced in the Association of MBA's (AMBA) Application and Enrolment Report of 2020 (AMBA, 2020). Locally, in South Africa, the trend is aligned, with the compound annual growth rate of MBA applications being 2.7% over the past decade (2011 – 2020) (South African Business Schools Association (SABSA), 2020).

Amidst the MBA's popularity though, it is yet to shed the shackles of criticism that MBA graduates are not adequately equipped to deal with the challenges of the contemporary dynamic and global business requirements, and that business schools should do more to impact students to make decisions and act in ways that reflect globally responsible leadership (Usher et al., 2019:1375). Ensuring that MBA graduates can lead and manage in an ethical and sustainable manner is subsequently essential if business schools are to remain relevant and legitimate to society (Usher et al., 2018:302). Against the backdrop of the current major global challenges (e.g., financial system failure, natural resource depletion, climate change, inequality, extreme poverty and hunger, and lack of education), exacerbated by management and leadership challenges (e.g., abuse of power, unethical practices, and a disregard for matters of sustainability), business schools have a moral obligation to demonstrably commit to responsible management education (Oosthuizen et al., 2018:1).

According to Nikolay Ivanov, Manager at Principles for Responsible Management Education (PRME, 2019:2), "the global landscape for business and management education continues to change more rapidly than ever before with increased focus on sustainability, responsible

management and the Sustainable Development Goals (SDGs).” PRME, in its ongoing efforts to incorporate the Principles of Responsible Management Education into educational activities, and thereby placing significant emphasis on the SDGs state that it is time to evaluate how business schools have responded to the ambitious agenda of the SDGs (PRME, 2020:5).

Weybrech (2019) in a report summarising approaches to reporting on the SDGs by business schools, state that the SDGs are noticeably more prominent in business school discussions on curriculum, programmes, partnerships, operations, and strategy. However, the report also highlights, among others, that too few schools are mentioning the SDGs and seldom are the SDGs connected to institutional and educational strategy.

In the South African context, it is also evident that responsible management education, ethical and sustainable business practice, and the SDGs are receiving significant attention when visiting the websites of business schools. Via the country’s business school association, these themes are also frequently discussed at the Deans and Directors meetings. The actual extent to which the SDGs are integrated into MBA curricula, research, and partnerships, is, however, not documented, and this study thus sets out to fill that void.

Problem Statement and Objectives

The reason why business schools are important for the SDGs and vice versa is simply because the SDGs represent the greatest social, economic, and environmental challenges facing current and future leaders and managers in all sectors, particularly in business. Increasingly businesses, Non-Governmental Organisations (NGOs) and policymakers are using the SDGs as a framework to guide and shape strategies and business policy. By so doing, organisations and institutions of all types

acknowledge that issues such as climate change, poverty, health and wellbeing, gender equality – *in fact all the SDGs* – are interrelated and material to their interests, risk management and future competitiveness. Subsequently, developing education and research about the SDGs and related organisational challenges and opportunities is imperative for business schools to enhance their purpose and relevance (PRME, 2020:12).

Rocha et al (2020:1) argue that business schools, however, appear to be followers rather than leaders in the social change taking place; while consumers and businesses are experimenting with new models of capitalism, business schools have been slow to change. Business schools, Rocha et al (2020:1) posit, need to lessen their emphasis on rational and efficient business and instead focus on how businesses can help address more fundamental questions of the human condition. Despite the efforts of business schools to advance programmes to better develop the next generation of responsible business leaders, Maloni et al (2021:1) state that some scholars have raised concerns about the effectiveness of responsible management education (RME), particularly the decoupling of pedagogical practices from stated responsible management education objectives by business schools (a school's actual RME implementation does not match its stated commitment). Maloni et al (2021:13) go further to state that business schools must critically evaluate their values, commitment, and accountability, and take ownership for forging future leaders who are both motivated and trained to curb the negative environmental and social impacts of business. Failure to do so questions the legitimacy of business schools. Khurana (2007:383) observes that "when institutions lose their legitimacy or find it called into question, the times are ripe for their reinvention."

Against this backdrop, the primary objective of this study is to determine how South African business schools are faring in relation to integrating the SDGs in its MBA curriculum, research, and partnerships.

Literature Review

Business schools have the potential to play a significant role in terms of both practice and policy for implementing the SDGs, applying theory in new ways to the "wicked problems" underpinning the SDGs. Working collaboratively and across disciplines, business school researchers can incubate imaginative new models which produce progress towards reaching the SDGs. At the same time, research in business schools accumulating around one or more of the Global Goals can become a site of cross- fertilisation internationally, drawing in a range of stakeholders to devise new ways of tackling sustainability issues. Delivering on the targets laid out in the SDGs will require new knowledge, mindsets, skills, practices, and in some cases, profound transformations of businesses and organisations. Five years into the implementation period of the SDGs, business school academics have a role in ascertaining the progress made since they were adopted in September 2015. They can also pinpoint what factors will help or hinder upcoming progress towards the SDG targets in different countries and environments (PRME, 2020).

Setó-Pamies et al (2020) argue that business schools should be held accountable for their responsibility towards society, and that the integration of SDGs in management education is a step in that direction, with specific roles as (*ibid*):

- ***responsible educators*** that develop students to appreciate the complex challenges faced by businesses and societies and

empowering them with the skills, values, and knowledge related to the achievement of the SDGs;

- ***responsible knowledge creators*** concerned with the social implications of research while ensuring that the knowledge generated is visible and useful for different stakeholders;
- ***sustainable institutions*** that control their own social and environmental impact;
- ***active participants*** in the dialogue taking place for any of the issues covered by the SDGs.

The SDGs need to become the bedrock of management education to make sustainable development a reality and improve the world. Curricula should therefore be reviewed through the lens of SDGs, for both degree and non-degree programmes. Thousands of students graduate annually from business schools across the world (more than 250 000 students enrolled in MBA programmes globally in the 2020-2021 academic year (AACSB, 2021), and these graduates are the leaders and influencers of the future. If, collectively, they actively engage with the SDGs in their business conduct, it will significantly contribute towards achieving the sustainability goals (Setó-Pamies, et al., 2020).

An overview of the SDGs

On 25 September 2015 all United Nations Member States adopted the 2030 Agenda for Sustainable Development (Resolution 70/1) at a General Assembly of the United Nations (UN, 2015). It serves as a shared blueprint for peace and prosperity for people and the planet, and central to it, are the 17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries in a global partnership. The SDGs recognise that ending poverty and other deficiencies must go together with strategies that improve health and education, reduce inequality, and stimulate economic growth, while also addressing

climate change and working to preserve our oceans and forests (UN, 2020). Figure 1 below provides a visual representation of the 17 SDGs (UN, 2015:14).

Progress has been made since 2015 when the goals were conceptualised, with some favourable trends – extreme poverty has declined considerably and immunisations against disease have increased. More people have access to electricity. Many more countries are taking real action to protect our planet and ensure the sustainability of the economic activity. National policies have been developed to manage rapid urbanisation. However, notwithstanding this progress, there are many areas that still require urgent action (UN, 2019:2).

Figure 1: The 17 Sustainable Development Goals



Source: UN (2021)

Why and how do the SDGs matter to business and business schools?

PRME (2020:14) provides the rational for the importance of the SDGs to business, as well as business schools. For business the SDGs can strengthen an enabling environment, outline future business

opportunities, enhance sustainable business practices, and allow for better stakeholder engagement. In addition, business has a need for sustainability literate students, to which the SDGs can serve as framework. In terms of business contributing to the SDGs, its scope can be defined by a company's strategic priorities as they cover all dimensions of sustainable development and the entire value chain. The SDGs are also specific, timebound and measurable, and based on key performance indicators (KPIs) for impact or outcomes. They are furthermore explicitly linked to financial value drivers and can be integrated into performance evaluation and incentives.

For business schools the SDGs can empower and enable current and future business practitioners, thereby adding value to business and society. The SDGs create a paradigm for teaching, learning, and understanding sustainability as core to the business model, which provide current and future business leaders with the tools to recognise and maximise opportunities for sustainable development. Business Schools can also connect with a network of stakeholders reaching beyond the business sphere, into signatories and supporting organisations, and meet the increasing demand from business and policy makers to educate and graduate sustainability literate students. As far as contributing to the SDGs, business schools can demonstrate commitment thereto via their mission, strategic vision, accreditation standards and external partnerships. As the SDGs cover the value chain and all business school stakeholders, all dimensions of sustainable development can be implemented on an interdisciplinary scale. In view of them being specific, timebound and measurable, they can be linked to value creation, financial drivers and future investment, and integrated through all levels of the business school and through strategic engagement with students.

The rationale for why and how the SDGs are important for both business and business schools is compelling and emphasises the moral

obligation to contribute to the achievement of the goals. The urgency is also clear in that there is less than a decade left to the achievement thereof.

The SDGs and business school curricula

In the context of education, the most obvious interpretation of the word 'curriculum' is to view it as a course for 'learning', and the very short definition of curriculum as a 'plan for learning', is deemed adequate (Taba, 1962). This simple definition allows for elaboration for specific curricular levels, contexts, and representations. This plan for learning thus incorporates the planned interaction of students with instructional content, materials, resources, and processes for assessing outcomes, inclusive of the explicit, the implicit, the excluded and the extra-curricular (Netherlands Institute for Curriculum Development, 2009:9).

Considering the growth in PRME signatories with the associated requirement of submitting progress reports every second year, business schools are increasingly demonstrating commitment to producing sustainability literate graduates and building the intellectual and changemaking capacity of students. Many schools also initiate transnational education, knowledge transfer, research, and exchange activities around the world. Business and management schools therefore need to ensure that education programs are designed to equip students with the knowledge, understanding, skills and motivation that will enable them to contribute to the achievement of the SDGs. In essence, there are two important issues for transforming business school education in the spirit of the SDGs, namely, rethinking content from a cross-disciplinary and systems approach, and rethinking pedagogy through innovative ways of teaching and learning (PRME, 2020:15-17).

Managers and leaders of the future need to be equipped to understand the complexities and the consequences of their actions, able

to deal with uncertainty and conflicts of values. The responsibility of business schools as catalysts for developing the leadership fibre of students that pass through their institutions is thus paramount. Therefore, business schools should pursue the building of intellectual capital for countries and industries on the bedrock of the SDGs.

South African Business School Community

South Africa has 22 business schools that offer MBA or MBL programmes accredited by the South African Council on Higher Education (CHE)[362]. These 22 schools are all members of SABSA, with the association's aim being to strengthen ties with the business fraternity and the education sector, and to improve the recognition of the organisation as a representative of SA business schools with government and regulatory bodies (SABSA, 2021). The 22 South African business schools are:

1. The Da Vinci Institute of Technology School of Business Leadership
2. Durban University of Technology - Faculty of Management Sciences
3. Gordon Institute of Business Science - University of Pretoria
4. Henley Business School
5. Independent Institute of Education
6. Johannesburg Business School
12. Regent Business School
13. Rhodes Business School
14. Richfield Graduate Institute Business School
15. Tshwane School for Business & Society
16. Turfloop Graduate School of Leadership - University of Limpopo
17. University of Cape Town Graduate School of Business
18. University of the Free State Business School

[362] https://www.sabsa.co.za/list-of-members/

7. Management College of Southern Africa
8. Milpark Business School
9. Nelson Mandela University Business School
10. North-West University Business School
11. Regenesys Business School
19. University of Kwa-Zulu Natal Graduate School of Business & Leadership
20. University of South Africa Graduate School of Business Leadership
21. University of Stellenbosch Business School
22. University of Witwatersrand Business School

With a collective MBA student body from 13 of the 22 schools of close to 5500 students in 2020[363], the potential impact by these student leaders and influencers coming from private and public sector in terms of contributing to the achievement of the SDGs is evident, considering the size of the South African economy. Another noteworthy contribution in 2020 from the 13 participating schools, was the total of 400 research publications produced. Research publications that contribute to theory and practice relating to the SDGs could potentially add significant value towards achieving the sustainability goals. More than half of the participating schools in this survey indicated that ethics and sustainable development are a core module of their MBA programmes, whilst others indicated that the ethics and sustainability themes are integrated across modules and not as standalone modules.

Methodology

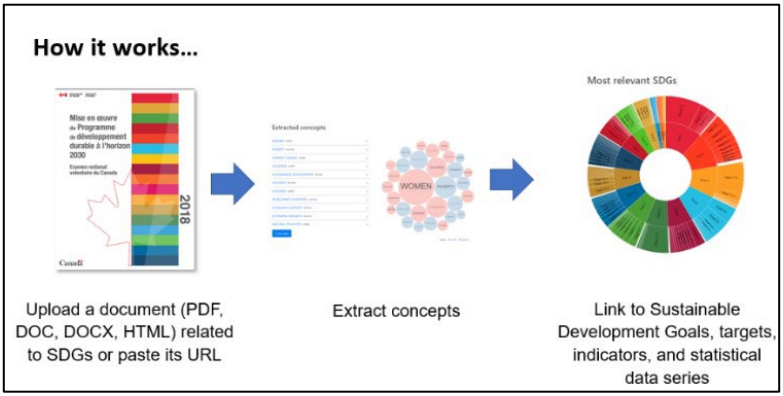
The UN has developed an innovative platform designed to support the 2030 Agenda implementation, called "LinkedSDG." The platform

[363] The Financial Mail South African Business School MBA survey 2020 (n = 13), conducted by Sylvia Jones from Lodestar Marketing Research (Pty) Ltd.

makes SDG data interoperable by means of advanced data modelling techniques and a common system of permanent identifiers for each of the 17 goals, their individual targets, their individual indicators and related statistical series. It also promotes data sharing and collaboration among stakeholders who are involved in producing and analysing SDG data. In essence, the platform provides all stakeholders and the public with open-source tools to make SDG data interoperable for easier data integration, analysis, and monitoring (UN, 2021b).

The pilot application, available at LinkedSDG, showcases the usefulness of adopting semantic web technologies and Linked Open Data (LOD) principles for extracting SDG related metadata from documents and establishing the connections among various SDGs. The application automatically discovers the semantic links between text documents, relevant SDG entities and the statistical data (UN, 2021b). Figure 2 below highlights how the platform functions.

Figure 2: How the LinkedSDG application works



Source: UN (2021b)

In pursuance of the objective of this study, and to enable the utilisation of the LinkedSDG platform, information on South African business schools and their MBA programmes available in the public

domain had to be secured. MBA.co.za, a website that features "all things MBA" in the South African context proved the ideal source for securing qualitative data. The MBA.co.za website hosts 15 of the most prominent business schools in South Africa, namely[364]:

1. Gordon Institute of Business Science
2. Graduate School of Business and Leadership, University of Kwa-Zulu Natal
3. Henley Business School
4. Independent Institute of Education
5. Johannesburg Business School
6. Milpark Business School
7. Nelson Mandela University Business School
8. North-West University Business School
9. Regent Business School
10. Rhodes Business School
11. Tshwane School for Business and Society
12. University of Cape Town Graduate School of Business
13. University of South Africa Graduate School of Business Leadership
14. University of Stellenbosch Business School
15. University of Witwatersrand Business School

[364] https://www.mba.co.za/sectiondirectory.aspx?s=48

Information on each of the above schools were sourced from MBA.co.za, with specific extraction of, (1) overview of the business school, (2) overview of the MBA programme of the particular school, and (3) structure of the MBA programme of the particular school. This structure of the extracted information was standardised across all 15 schools and subjected to the LinkedSDG application. The application then extracted key concepts related to sustainable development from each of the sets of information and linked them to the most relevant sustainable development goals, targets, indicators, and data series. Figure 2 highlights the process, i.e., uploading a document or a URL, after which the platform then extracts the concepts, and presents a donut-graph which links the concepts with SDG targets, indicators, and statistical data series. When hovering the cursor on the platform over the goals and targets, an explanation of each is then present in real time. As the donut-graphs of each school was copied and presented in section 5 below, this functionality will not be available in this text document.

The results of the analysis resulting from the LinkedSDG modelling process is presented and discussed in the next section.

Results / Findings

The 17 SDGs are articulated into 169 targets, 230 indicators, and over 400 data series that help to measure the progress towards achieving the SDGs. The full SDG Taxonomy is officially published and maintained as linked open data at: http://metadata.un.org/sdg/ (UN. 2021c).

The individual 15 South African business schools' results derived from the LinkedSDG application are presented via an individual "SDG wheel" that highlights the goals, targets, indicators, and data series that

are most relevant to the processed MBA information, based on the extracted concepts and geographical areas of activity.

The inner layer of the SDG wheel indicates the specific SDG goals emerging from the data as well as the prominence of each expressed with the extent of its prominence. The outer layer indicates the targets coming to the fore the strongest from each goal.

The SDG wheel of each of the 15 schools along with the strongest emerging SDG are presented in Table 1, with the goal associated with each colour below.

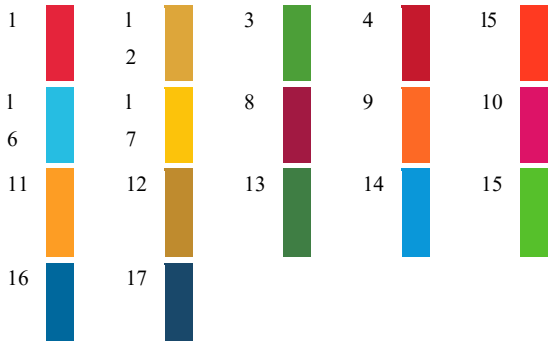
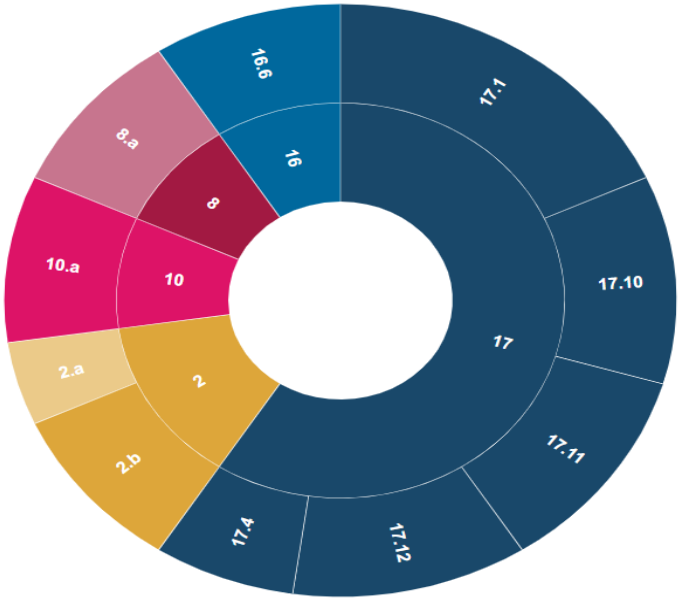


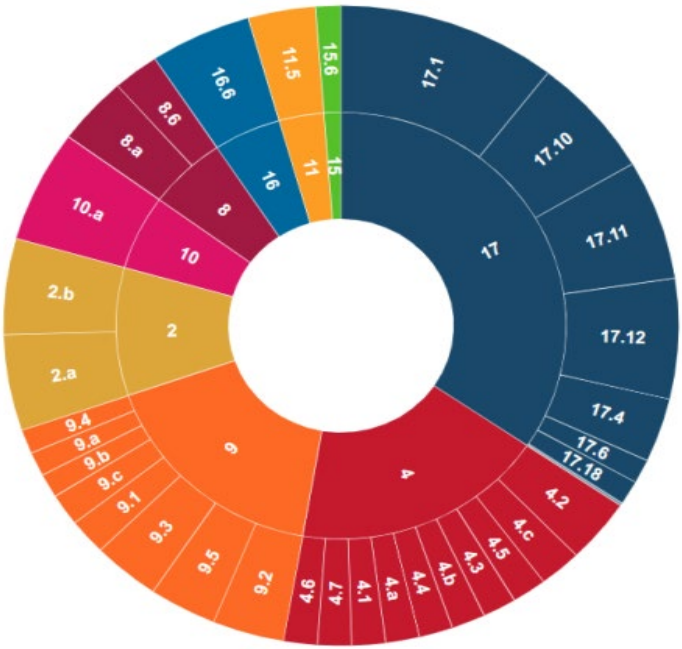
Table 1: Individual business schools' SDG wheels highlighting SDG goals, targets, indicators, and data series that are most relevant to the processed MBA information

Gordon Institute of Business Science



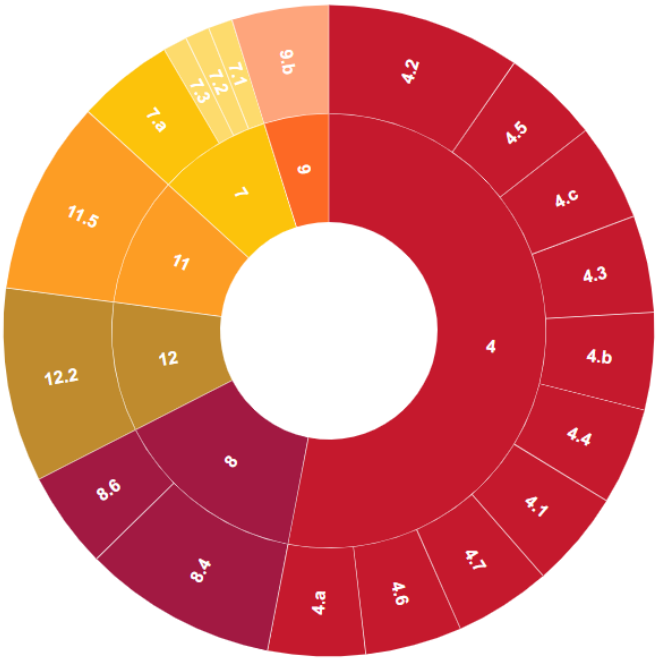
Strongest emerging SDG: Goal 17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development.

Graduate School of Business and Leadership,
University of Kwa-Zulu Natal



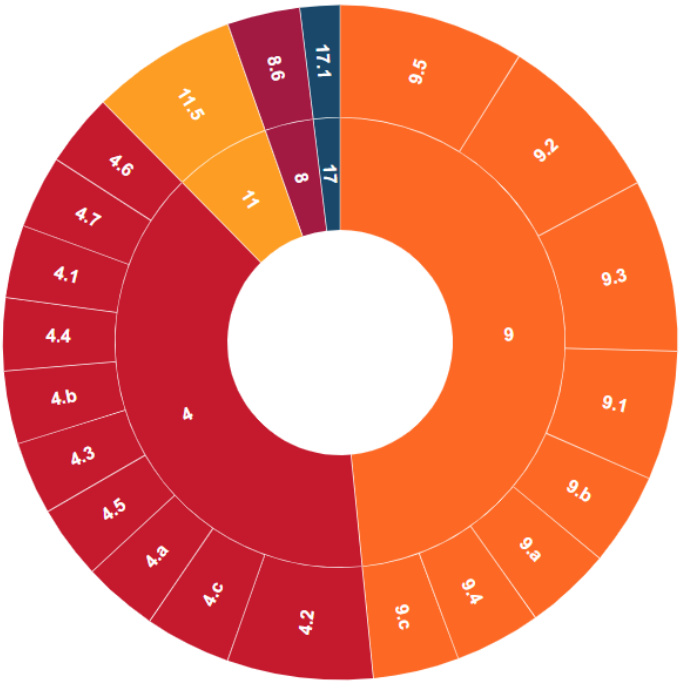
Strongest emerging SDG: Goal 17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development.

Henley Business School



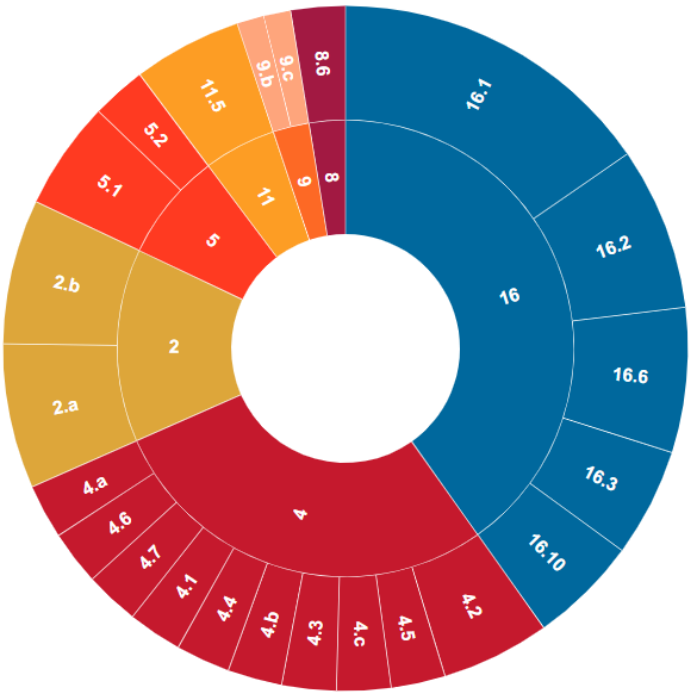
Strongest emerging SDG: Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

IIE MSA



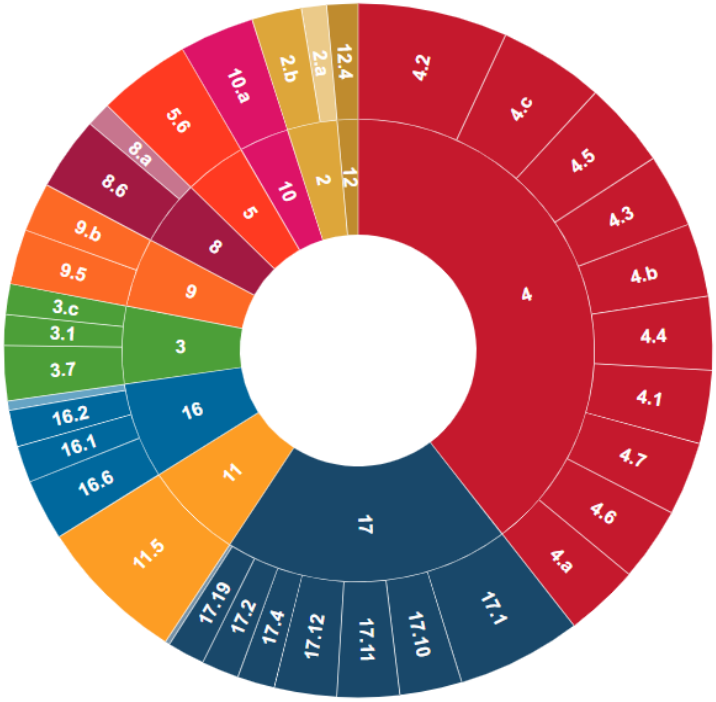
Strongest emerging SDG: Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.

Johannesburg Business School



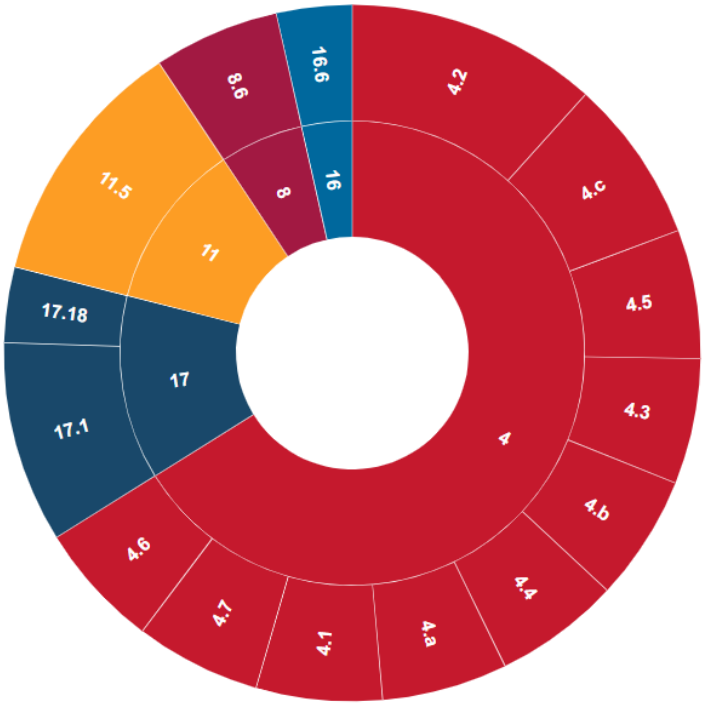
Strongest emerging SDG: Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.

Milpark Business School



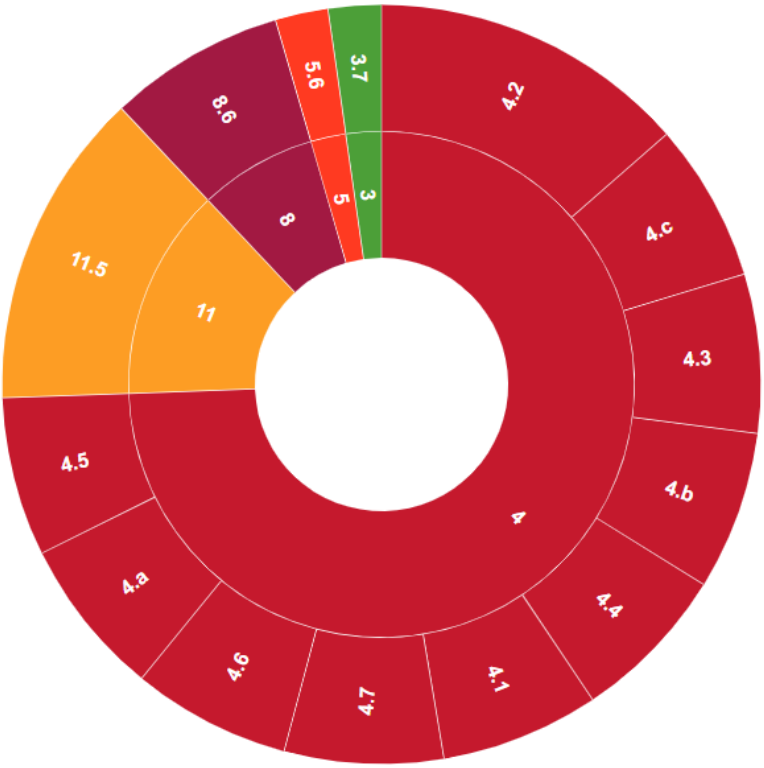
Strongest emerging SDG: Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

Nelson Mandela University Business School



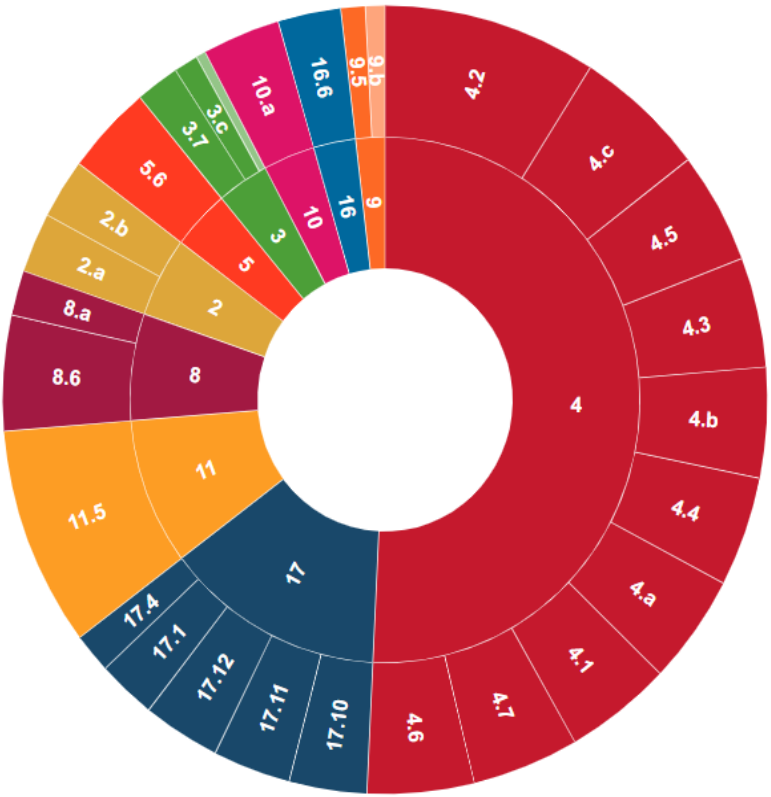
Strongest emerging SDG: Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

NWU Business School



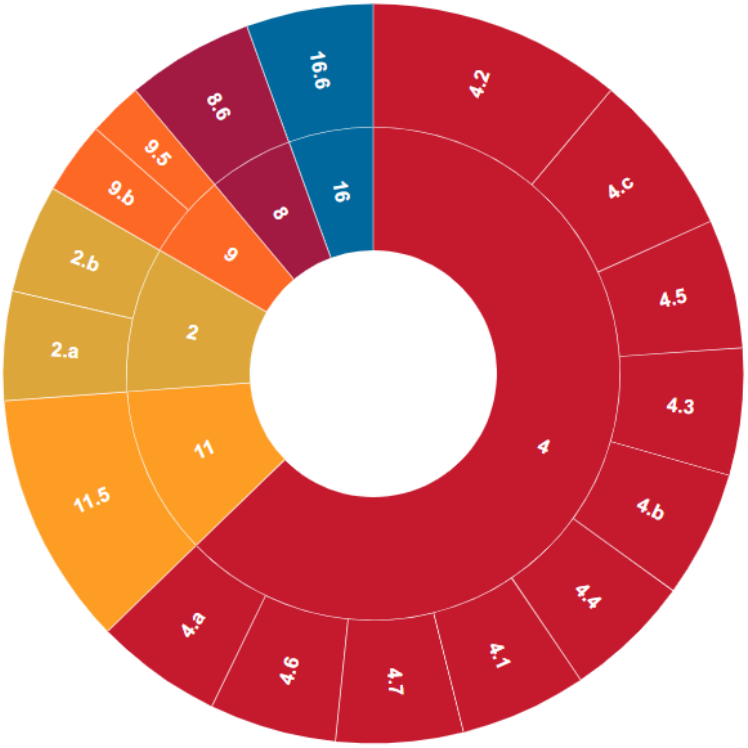
Strongest emerging SDG: Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

Regent Business School



Strongest emerging SDG: Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

Rhodes Business School



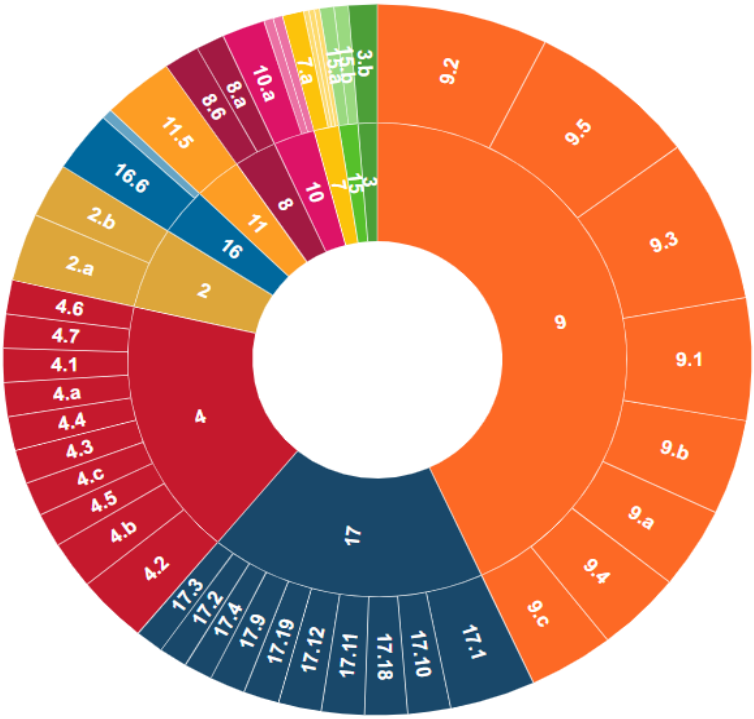
Strongest emerging SDG: Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

Tshwane School for Business and Society



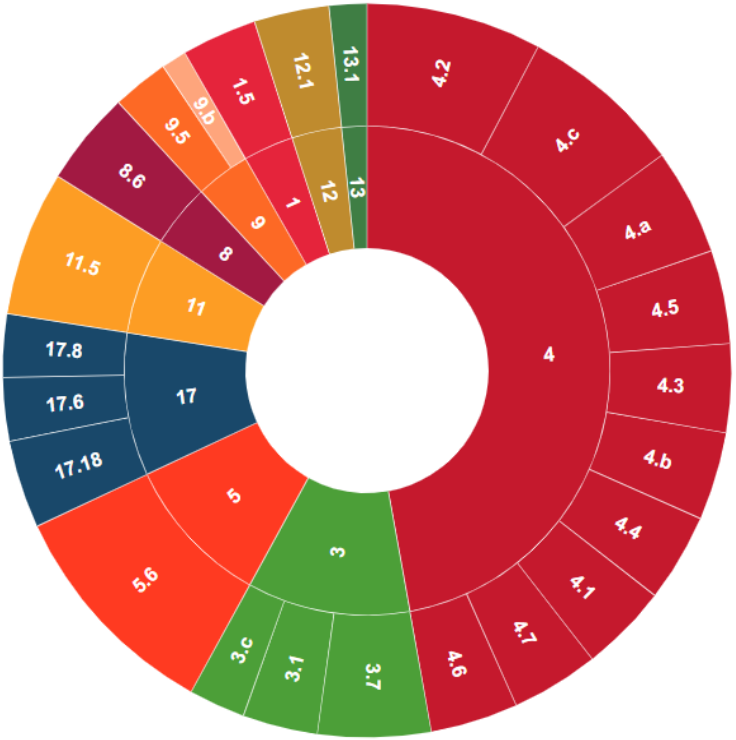
Strongest emerging SDG: Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

University of Cape Town Graduate School of Business



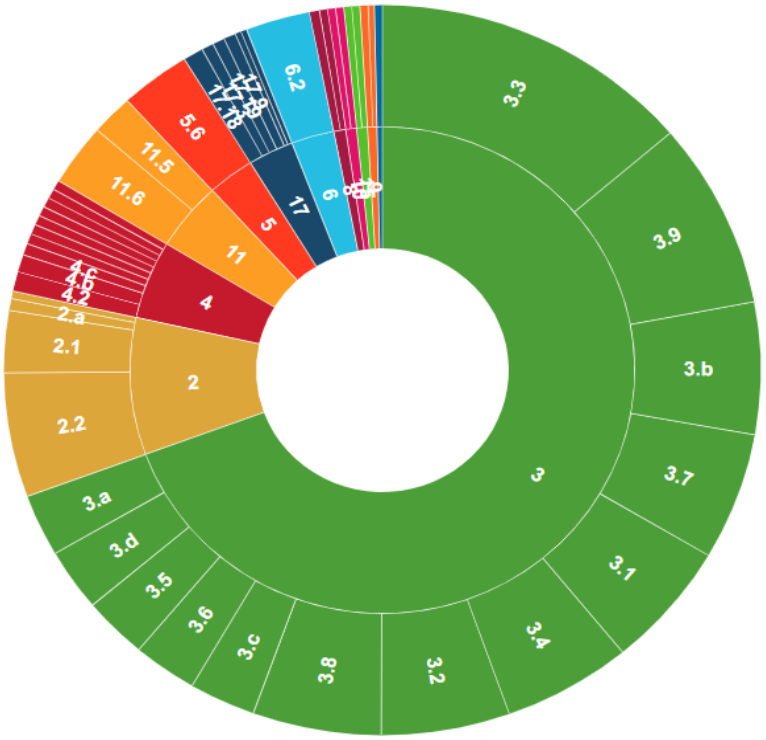
Strongest emerging SDG: Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

University of South Africa Graduate School of Business Leadership



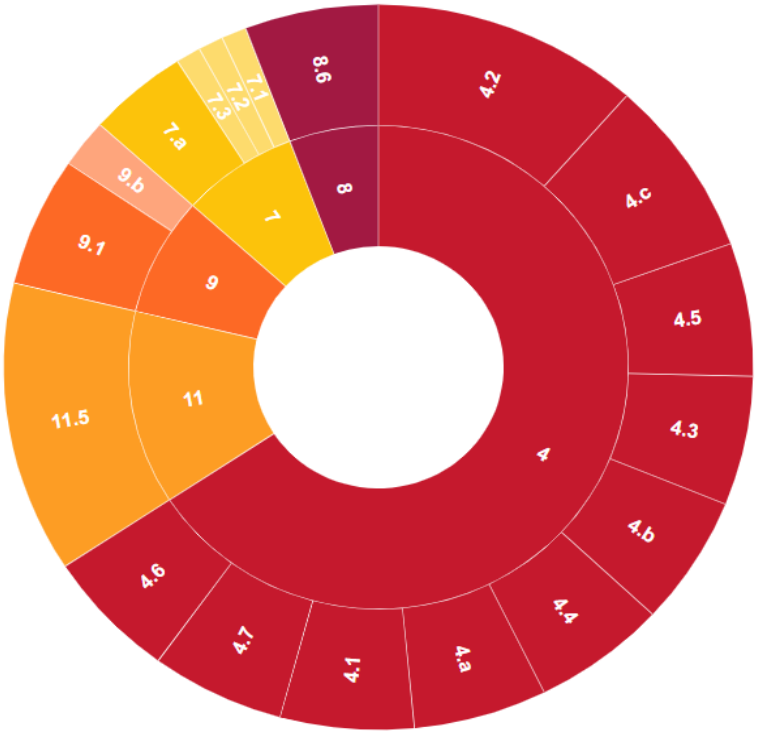
Strongest emerging SDG: Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

University of Stellenbosch Business School



Strongest emerging SDG: Goal 3. Ensure healthy lives and promote well-being for all at all ages.

Wits Business School



Strongest emerging SDG: Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

From initial observations it is evident that Goal 4 (Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all) is the dominant emerging SDG across South African business schools, with 8 of the 15 schools rating the strongest here. This is followed by Goal 17 (Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development) and Goal 9 (Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation) with 2 schools respectively rating strongest in them. Goal 3 (Ensure healthy lives and promote well-being for all at all ages), Goal 15 (Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss), and Goal 16 (Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels) are respectively the strongest with the 3 remaining schools.

To derive at an overall view of the South African business school community, the data extracted was then aggregated. Table 2 indicates the ranking of the goals per business school, along with the number of schools that feature a particular SDG ("count" column). Next, the ranking average across schools was calculated, after which the averages were ranked to indicate the highest to lowest SDG emerging from the data.

Table 2: Individual ranking of SDG prominence aggregated for business school sector

	BS 1	**BS 2**	**BS 3**	**BS 4**	**BS 5**	**BS 6**	**BS 7**	**BS 8**	**BS 9**	**BS 10**
Goal 1										
Goal 2	2	4			3	10			5	3
Goal 3						5		5	7	
Goal 4		2	1	2	2	1	1	1	1	1
Goal 5					4	8		4	6	
Goal 6										
Goal 7			5							
Goal 8	4	6	2	4	7	7	4	3	4	5

	BS 11	**BS 12**	**BS 13**	**BS 14**	**BS 15**	**Count**	**Rank Ave**	**Goal Ranking**
Goal 1			8			1	8	16
Goal 2		5		2		8	4,25	4
Goal 3		12	2	1		6	5,33	9
Goal 4		3	1	3	1	13	1,54	1
Goal 5			3	5		6	5	6
Goal 6	4			7		2	5,5	10
Goal 7		10			4	3	6,33	12
Goal 8		8	6	8	5	14	5,21	7

	BS 1	**BS 2**	**BS 3**	**BS 4**	**BS 5**	**BS 6**	**BS 7**	**BS 8**	**BS 9**	**BS 10**
Goal 9		3	6	1	6	6			10	4
Goal 10	3	5				9			8	
Goal 11		8	4	3	5	3	3	2	3	2
Goal 12			3			11				
Goal 13										
Goal 14		7								
Goal 15		9								
Goal 16	5				1	4	5		9	6
Goal 17	1	1		5		2	2		2	

	BS 11	**BS 12**	**BS 13**	**BS 14**	**BS 15**	**Count**	**Rank Ave**	**Goal Ranking**
Goal 9	5	1	7	11	3	12	5,25	8
Goal 10		9		9		6	7,17	14
Goal 11		7	5	4	2	13	3,92	3
Goal 12	3		9			4	6,5	13
Goal 13			10			1	10	17
Goal 14	2					2	4,5	5
Goal 15	1	11		10		4	7,75	15
Goal 16		6		12		8	6	11
Goal 17		2	4	6		9	2,78	2

The South African business school community MBA SDGs and associated targets, ranked from strongest to weakest, are subsequently as follows:

1. Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
2. Goal 17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development
3. Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable
4. Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture
5. Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development
6. Goal 5. Achieve gender equality and empower all women and girls
7. Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
8. Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
9. Goal 3. Ensure healthy lives and promote well-being for all at all ages
10. Goal 6. Ensure availability and sustainable management of water and sanitation for all
11. Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
12. Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all
13. Goal 12. Ensure sustainable consumption and production patterns

14. Goal 10. Reduce inequality within and among countries
15. Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
16. Goal 1. End poverty in all its forms everywhere
17. Goal 13. Take urgent action to combat climate change and its impacts

It is expected that Goal 4 (Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all) emerged as the most relevant SDG to the processed MBA information, because of the nature of the organisations, i.e., management education and training institutions.

Of significance is that, as a collective, all 17 SDG are covered, albeit that some reflect strong integration into the MBA programmes, whilst others reflect quite weak. Associated with the goals that are highly ranked, is also the significant coverage of the targets imbedded in each of the goals. Considering the top integrated SDG across the sample of business schools, namely Goal 4 of Quality Education, with the goal specifically referring to "ensuring inclusive and equitable quality education and promote lifelong learning opportunities for all", the targets imbedded within Goal 4 can be viewed at http://metadata.un.org/sdg/4?lang=en

For further detail on the indicators imbedded within the targets, please refer to the Sustainable Development Goals Taxonomy[365].

The most significantly represented SGDs that emerged from the extracted concepts, are:

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[365] Sustainable Development Goals Taxonomy, http://metadata.un.org/sdg/?lang=en

- Goal 8 (Promote sustained, inclusive, and sustainable economic growth, full and productive employment and decent work for all) [14 schools].
- Goal 4 (Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all) [13 schools]
- Goal 11 (Make cities and human settlements inclusive, safe, resilient and sustainable) [13 schools]
- Goal 9 (Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation) [12 schools].
- Goal 17 (Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development) [9 schools].

The above therefore has 60% to 93% representation amongst the sample of 15 business schools. From the analysis the following is also noteworthy in getting a sense of the weakest SDGs that emerged from the extracted concepts:

- Only 1 business school reflected Goal 1 (End poverty in all its forms everywhere) from its extracted concepts.
- Only 1 business school reflected Goal 13 (Take urgent action to combat climate change and its impacts) from its extracted concepts.
- Only 2 schools reflected Goal 6 (Ensure availability and sustainable management of water and sanitation for all) from its extracted concepts.
- Only 2 schools reflected Goal 14 (Conserve and sustainably use the oceans, seas and marine resources for sustainable development) from its extracted concepts.

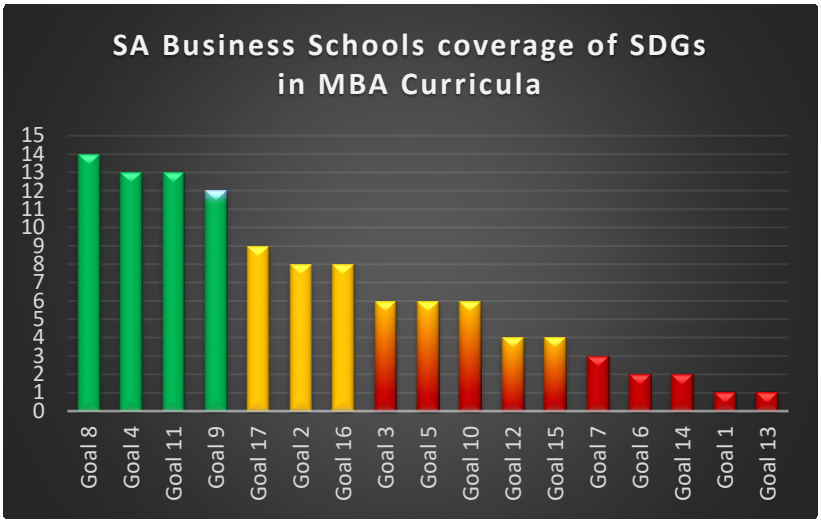
- Only 3 schools reflected Goal 7 (Ensure access to affordable, reliable, sustainable and modern energy for all) from its extracted concepts.

The economy, education, human settlements, infrastructure, industrialisation, innovation, and global partnerships as it relates to the SDGs evidently dominates the focus of South African business schools when considered as an aggregate.

On the flipside, poverty, climate change, the environment, and alternative energy sources as it relates to the SDGs have very weak coverage by South African business schools when considered as an aggregate. Too few South African business schools therefore integrate these latter concepts into their MBA curriculum.

Figure 3 provides the whole view in terms of the number of business schools from which coverage of the various SDGs emerged.

Figure 3: The number of business schools coverage per SDG



If, on an arbitrary scale of…


80% and above = satisfactory


50% to 80% = reasonable


40% to 50% = undesirable


0% to 40% = poor

…SDG 8, 4, 11, and 9 are satisfactorily covered; SDG 17, 2, and 16 are reasonably covered; SDG 3, 5, 10, and 12 are undesirably covered; and, SDG 7, 6, 14, 1, and 13 are poorly covered. Next follows the detailed expose of the extent of integration of the SDGs into MBA curricula, research, and partnerships aggregated across the 15 South African business schools.



Satisfactory integration

- **Goal 4.** Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
- **Goal 8.** Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
- **Goal 9.** Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
- **Goal 11.** Make cities and human settlements inclusive, safe, resilient and sustainable



Reasonable integration

- **Goal 2.** End hunger, achieve food security and improved nutrition and promote sustainable agriculture

- **Goal 16.** Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
- **Goal 17.** Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

Undesirable integration

- **Goal 3.** Ensure healthy lives and promote well-being for all at all ages
- **Goal 5.** Achieve gender equality and empower all women and girls
- **Goal 10.** Reduce inequality within and among countries
- **Goal 12.** Ensure sustainable consumption and production patterns
- **Goal 15.** Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Poor integration

- **Goal 1.** End poverty in all its forms everywhere
- **Goal 6.** Ensure availability and sustainable management of water and sanitation for all
- **Goal 7.** Ensure access to affordable, reliable, sustainable and modern energy for all
- **Goal 13.** Take urgent action to combat climate change and its impacts
- **Goal 14.** Conserve and sustainably use the oceans, seas and marine resources for sustainable development

The above "performance dashboard" serves as point of departure for the South African business school community for setting an agenda in pursuit of cross-sectoral commitment to, and integration of the SDGs into MBA curricula, research, and partnerships.

Management Implications for South African Business Schools

Notwithstanding the moral obligation of business schools to contribute to the achievement of the SDGs, institutional commitment to ethics, responsible management education and sustainability have become requirements by programme accreditation bodies. A move towards sustainability and social impact in the criteria used in the major rankings of business schools is also evident. Moreover, employers increasingly require employees to be familiar with sustainability and the SDGs and how to integrate them into core business models as is evident from industry collaborations. In terms of research and often associated funding, the SDGs are also increasingly being incorporated into international research projects. As an internationally recognised framework, the SDGs furthermore offer business schools with a guide to frame their core competencies in a way that allows them to engage globally and collaborate in teaching and research activities with other schools, as well as a to build partnerships and collaborate across sectors (PRME, 2020:5-6).

García-Feijoo et al (2020:160) posit that business schools are facilitators of change that could definitively contribute to achieving the SDGs, but they are not doing so at the rate one would expect. Often business schools are uncertain as to where to start, and in setting the agenda, they should consider interventions in teaching, research, and management by promoting a paradigm shift, pursuing interdisciplinary collaboration, reaching out to other business schools locally and

globally, adding new activities, and adopting the use of active methodologies.

It is therefore important for South African business schools to reflect on its values, commitment, and accountability. They should take responsibility and ownership for shaping future business leaders who are empowered and equipped to curb the negative environmental and social impacts of business, because failure to do so will put the legitimacy of business schools at risk (Maloni et al., 2021:13).

Conclusion nnd Recommendations

The analysis of South African business schools' MBA information proved valuable in getting a sense of the extent of SDG integration into MBA curricula, research, and partnerships, albeit at a high level. It assists significantly in setting an agenda for an in-depth review at the individual school level. While the extent of integration of the SDGs in South African business schools' MBA curricula appears moderate, it is important to take note of the targets imbedded within each goal. At the goal-level the impression might be that integration into the curricula is sufficient whilst at the target-level integration might be insufficient.

Whilst the integration of the SDGs into MBA curricula is by no means a failing effort in the South African business school community as is evident from the findings, much are still to be done, especially in relation to the SDGs where coverage appear weak, such as the SDGs addressing poverty, climate change, the environment, and alternative energy sources.

As an aggregate, the country's business schools (sufficiently represented by the 15 business schools listed on MBA.co.za) cover all 17 SDGs, albeit it, as mentioned, faring well in some, but faring poorly in others as expressed in Figure 3. Emphasis should initially be on the SDGs with undesirable integration and poor integration, i.e.:

Undesirable integration	***Poor integration***
• Goal 3. Ensure healthy lives and promote well-being for all at all ages • Goal 5. Achieve gender equality and empower all women and girls • Goal 10. Reduce inequality within and among countries • Goal 12. Ensure sustainable consumption and production patterns • Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	• Goal 1. End poverty in all its forms everywhere • Goal 6. Ensure availability and sustainable management of water and sanitation for all • Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all • Goal 13. Take urgent action to combat climate change and its impacts • Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development

The way forward in improving the status quo for South African business schools would imply interventions at the individual school level, as well as on the collective sector level.

Recommendations at the individual businesses school level

It is recommended that business schools initiate an SDG self-audit in relation to its curricula, research, and partnerships. The LinkedSDG[366] platform is a valuable tool that can assist business schools in evaluating

[366] LinkedSDG: https://sustainabledevelopment.un.org/LinkedSDGs/about

their commitment to the SDGs and the subsequent integration thereof into curricula, research, and collaborations.

In addition, the "Global indicator framework for the Sustainable Development Goals and targets of the 2030 Agenda for Sustainable Development[367]" should be used as reference point for detailed analysis. The indicator framework can be downloaded in MS-Excel for ease of use in the analysis. Following the self-audit, the business school should craft a plan of action, prioritising the interventions in order of weakest to strongest performance in relation to SDG integration into the MBA curriculum, research, and partnerships.

The PRME "Blueprint for SDG Integration into Curriculum, Research and Partnerships[368]" is also an invaluable resource for business schools in their endeavours to transition from the conceptual to the practical in terms of integrating the SDGs in their curricula, research, and partnerships.

Business schools should consider the use of the "Sulitest[369]" to measure and improve sustainability literacy in its MBA curriculum. The Sulitest could assist faculty in identifying the gaps to in turn develop interventions to empower and equip their students to address the social, economic, and environmental challenges the world is facing, and in order to reach the SDGs.

Business schools should also pursue affiliations with organisations that are custodians of the promotion of responsible management

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[367] Global indicator framework for the Sustainable Development Goals and targets of the 2030 Agenda for Sustainable Development: https://unstats.un.org/sdgs/indicators/indicators-list/

[368] Blueprint for SDG Integration into Curriculum, Research and Partnerships: https://d30mzt1bxg5llt.cloudfront.net/public/uploads/PDFs/BlueprintForSDGIntegration.pdf

[369] Sulitest: https://www.sulitest.org/en/

education informed by the SDGs, such as PRME[370] and Responsible Research in Business & Management (RRBM)[371]. Associations or partnerships with organisations that promote ethics should also be considered, for example Globethics.net[372] and the Business Ethics Network of Africa (BEN-Africa)[373]. Finally, the value of accreditation with accreditation bodies such as AMBA[374], AACSB[375], and EQUIS[376] cannot be overemphasised. Not only does the accreditation process subject a business school to rigorous evaluation in relation to strict criteria to meet international standards but provides the valuable opportunity of self-reflection and continuous improvement. Via the accreditation bodies, support and developmental initiatives regarding the SDGs are also a prominent benefit for accredited schools, not to mention the value of collaboration with fellow-accredited schools for purpose of benchmarking, best-practice pursuance, and research.

Recommendations at the collective, sector level

Within the context of the South Africa business school sector, SABSA could fulfil a strong influencing role in creating greater awareness of the SDGs and promoting the importance thereof in terms of integration with MBA curricula amongst its 22 member schools.

At the Deans and Directors meetings, the SDGs should become a standing point on the agenda so that dialogue and debate could be

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370 Principles of Responsible Management Education (PRME): https://www.unprme.org/

371 Responsible Research in Business & Management (RRBM): https://www.rrbm.network/

372 Globethics.net: https://www.globethics.net/home

373 BEN-Africa: https://www.benafrica.org/

374 AMBA: https://www.associationofmbas.com/

375 AACSB: https://www.aacsb.edu/

376 EQUIS: https://www.efmdglobal.org/accreditations/business-schools/equis/

facilitated, with best practice and lessons learned shared among members.

Regular webinars with experts and thought leaders on the SDGs could be hosted with all member schools and their faculty to attend. In addition, workshops could be scheduled to assist members schools to review, craft strategies and develop action plans for integrating the SDG into MBA curricula.

Via the mechanisms of SABSA, collaboration between member schools in relation to the integration of the SDGs into MBA curricula should be promoted, and best-practice guidelines should be developed and drafted.

Closing Comments and Limitations

Understandably the integration of the SDGs into MBA curricula will not be without challenges. There might be the lack of acceptance on the part of some students, complex translation of SDGs into curricula, difficulty in dealing with all the goals, and most importantly the limited timeframe of 2030 achievement of the goals. Nonetheless, South African business schools must strive to integrate the SDGs into curricula, research, and partnerships to change the way employees, managers, CEOs, and leaders think and act, which in turn will lead to broader changes across industries globally. The SDGs' framework emphasises the need to act in a collaborative and urgent manner. In management education, the SDGs should be embraced as an opportunity to accelerate the long-needed changes in management curricula to give sustainable development the prominence it deserves (Setó-Pamies et al., 2020:7).

The SDGs can provide an overarching framework that not only addresses environmental and economic sustainability but is also inclusive of social sustainability and adopt a collaborative approach across multiple levels (organisations, cities, and government) thus

enabling students to see the importance of legislative regulation in enabling achievement of the SDGs. The emphasis on the SDG integration into curricula, research, and collaboration allows for a global focus that is applicable to all countries and cultures. This model of integrating sustainability into the curriculum through the SDGs can be used in any discipline to support a holistic and inclusive approach that promotes a viable and equitable future for all (Landrum, 2021:1346).

This study was limited to 15 of the 22 South African business schools accredited by the Council on Higher Education (CHE) to offer MBAs or MBLs in South Africa. It nonetheless provides a good representative 'snapshot' of South African business schools SDG integration into MBA curricula, research, and partnerships. Another limitation is the depth of analysis, seeing that only data available in the public domain were used in the study, hence the recommendation that business schools individually undertake a deep analysis with the assistance of the LinkedSDG tool, and the indicator framework.

The study has nonetheless set an important foundation from where further research into the subject can be undertaken in the South African context. Possibilities for future research are, comparative studies between countries, and studies on ways to measure the impact of business school SDG activities emanating from curricula, research, and collaboration.

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EPILOGUE

ETHICAL LEADERSHIP FOR SUSTAINABLE DEVELOPMENT IN HIGHER EDUCATION REVISITED

Amélé Adamavi-Aho Ekué

The most important quality of a leader is integrity. Doing the right thing even if it's hard. – Adam Grant

Ethics and values matter in higher education.[*] Whether specialised business schools, state and private universities, or research centres, this collection of chapters offers a detailed and interdisciplinary insight into the manifold initiatives higher education institutions are undertaking in promoting the sustainable development goal agenda from an ethical perspective. Most importantly, they understand their mandate in this regard less as an *external* programmatic mandate, rather are they engaged *internally* in a values-driven education and creation of a corresponding learning and research environment. This is crucial to underline, as this multi-authored volume constitutes not just another contribution on sustainable development goals as a subject matter, but more so as a stimulating framework for pedagogical reflection and the

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analysis of meaningful educational management, teaching, and research preparing for real-life contexts.

This joint publication project is in itself the result of a cross-organisational collaboration which has brought the co-editors, all themselves engaged in higher education and in building bridges between theory and praxis in education, together around a challenge: How can higher education institutions equip a new generation of leaders with competences that do not end with disciplinary boundaries, but bear in mind a global, yet locally sensitive, and holistic outlook on improving living conditions for all, now and in future?

We have noticed in our educational praxis the vital importance of establishing and nurturing an institutional culture of learning. This entails not only the provision of a teaching, learning, and research environment for the stakeholder groups benefitting directly from higher education, but – and perhaps more importantly so – also the cultivation of a posture of active learning inside the institution on how to implement ethical principles and values in a long-term perspective and with the intersectionality of societal impact objectives in mind. The sustainable development goals (SDG) framework lends itself to such an exercise. The contributing authors of this volume have demonstrated this for their business schools and other higher education institutions. They have done so in a very constructive manner, critically engaging with the SDG system, as well as with their respective contextual, institutional, and operational challenges.

The value of this volume is that it brings together a wide range of contributions providing insights in precisely this double bind of 'learning outside' and 'learning inside' indispensable for advancing the discourse on ethics, sustainable development goals and higher education.

In a systematic perspective, four salient dimensions can be highlighted emerging from these contributions, which deserve to be explicitly presented and pursued in scholarly debate. This is not to

reduce or level out the individual outcomes each of these contributions offer, rather to facilitate an orientation and to stimulate the engagement with thematic fields coming into view.

Sustainable Development Goals as an Ethical Field of Theory and Praxis in Higher Education

There is probably no other contemporary field of public and scholarly debate which serves more as a kind of unifying symbol than sustainable development. The authors of this volume bring this aspect to the fore by establishing clearly how the sustainable development goals constitute a distinct field of theory and praxis in higher education, through which ethics can be probed as a transversal. All contributions elaborate, from their different vantage points, how the sustainable development goals can only be attained if grounded in an ethical understanding. This ethical framework bears both theoretical and practical implications and higher education is the propitious space to work systematically on these.

Athena Vongalis-Macrow and Mandy Baker, in their chapter, show for example how sustainability is an integral part of the university's research strategy with guiding principles around quality education. The case studies they present show how there can be meaningful bridges between the theoretical analysis of sustainability and the way it practically affects people enabled to make long-term lifestyle changes through learning opportunities the university offers. One of the authors' key findings is that these theory-praxis bridges are most successful if coupled with an institutional value proposition that aims at societal impact: 'doing good' so that the communities can flourish.

In a similar vein, Fiona Robertson emphasises in her contribution on integrated reporting that higher education institutions will have to define, now more than ever before, which value they are creating for a

broad array of stakeholders. She shows how valuable higher education contributions can be in terms of widening the perception of deep-seated economic concepts by underlining value creation in terms of multiple capitals, and not only of monetary worth. Her participatory research, conducted in several European countries, is fascinating as it unveils the impediments of a consequent implementation of integrated reporting at higher education level and thereby offers a valuable evidence basis for sustainability-oriented strategizing. Simultaneously, it provides clear avenues on how institutions can overcome them by drawing on their multi-stakeholder and multiple capital activities.

Julio C. Durand, writing on the Argentinian and South American experience of higher education institutions with education for sustainable development, observes that embracing this educational mandate constitutes a genuine challenge for leadership in educational institutions. Teachers and faculty members need to be prepared to teach and transmit the importance of humans living in harmony with the earth, which entails reflecting upon institutional management, curriculum design and educational competency development. He elaborates, based on two initiatives, how the creation of a new degree programme and a joint award programme can not only impact the higher education community and the consciousness of education for sustainable development as an interdisciplinary responsibility for reforms within the institutions, but also strengthen a wider dissemination of sustainability as a theme with profound practical influence on people leading their lives today and in the future.

Considering Ethics, Sustainable Development Goals and Contextuality

The articles of this volume attest to the evidence that the sustainable development goals constitute a framework of reference for theoretical

discourse and practical implementation, in which business schools, as all higher education institutions, are engaged. However, this engagement is marked by the contextual relevance and underpinnings the sustainable development goals gain. It has been a longstanding research desideratum to deepen the contextualization of sustainable development goal framework and of education for sustainable development, and the chapters of this volume shed a particular light on this contextual dimension of higher education's engagement with sustainability. This may be fostered by the insight transpiring all contributions, that higher education implicitly and explicitly creates spaces for whole-person formation, for moral imagination, i.e., for the ethical contours of what it means to be in this world and to shape interactions. Contextuality is not only essential for defining a sustainability agenda and planning for its successful implementation, rather it is critical for understanding the rationales and worldviews that undergird its reception in the different regions.

While all chapters bring to the fore one or several elements of contextuality, some of them illustrate this dimension in a specific manner. Chidiebere Onyia, for example, invites us to consider the context of the Nigerian higher education system and unfolds how higher education infrastructure delivery processes are highly dependent on the existence and nurturing of a positive ethical culture, especially for the institutional leadership. This is crucial, as per Onyia, especially for emerging scholars and researchers who seek to become resilient against the proliferation of unethical behaviour in the wider society.

Stephan Rothlin pays particular attention to the ethical underpinnings of the sustainable development goals and how their achievement can be promoted in consideration of an Asian-Confucian context with its seniority-leadership understanding and congruity of message and action within a stringently hierarchical setting. Grounded in these contextual observations, he advocates for intrinsic motivation and the departure

from a compliance-based approach to the implementation of the sustainable development goals. He presents a significant illustration with the project of the Deignan Award for Sustainable Entrepreneurship, which, apart from resonating with the local culture, cultivates the attention for revisiting conventional economic paradigms and allows alternative concepts, such as the common good, to take root.

Contextuality not only shapes the philosophical contours of how the sustainable development goals are received as a framework and how leadership is conceptualised against this background. Nthoesane and Ngambi describe in their exposé that it can also unleash higher education's potential to effectively contribute to a national development project, as is the case in Zambia around Sustainable Development Goal 8 on decent work and economic growth. The experience of precarious living conditions and the analysis of underlying economic, social and political factors in a given context – as can be shown for a plethora of countries aspiring for a holistic national development agenda – constitutes the starting point for a university teaching and research strategy that is strictly outcome- and transformation-oriented and can be, as in this case, focused on a specific prioritised domain.

Msafiri, in his chapter, pursues this argumentation further in as much as he emphasises the need for higher education institutions to take on a distinctly critical contextual stance if they would wish to advance the sustainable development agenda. African higher education institutions, such is his plea, need to develop a new educational model independent of external influences and focus on contextually sensitive and innovative solutions for real-life problems, in particular in relation to climate action at the intersection of other spheres which will determine the livelihood of people on the continent and beyond.

Ethical Mentoring and Role Modelling for Sustainable Development

More than any other dimension, the contributions of this volume indicate the crucial importance of ethical mentoring and role modelling to accompany the holistic formation of leaders, who are not only specialized experts, but conversant interpreters, acting with integrity and able to establish the necessary connections. This requires not only an intellectual effort of knowledge creation and transmission, but an intentional accompaniment that assists in nurturing ethical postures of discernment and corresponding practice.

Similarly to the Zambian study carried out by Nthoesane and Ngambi, Arnold Smit focuses on Sustainable Development Goal 8, and how South African small business owners can be supported through a dedicated educational programme. Smit demonstrates that the initiative becomes relevant as it offers tailored capacity development opportunities for the entrepreneurial participants, in which coaching and mentoring plays a key role to ensure learning progression. This may constitute a valuable anchor for further methodological investigations, also in other business school contexts, on how the lessons learned can help to design contextual and praxis-oriented continuing formation programmes with substantial impact on livelihoods. The 'contextual reading' on the programme this contribution provides, both in terms of the direct involvement of the target group and the insights on what economic growth and decent work means, is in itself a value added for the discussion on sustainable development in an educational perspective.

Mentoring – in its conceptual version – is also a dimension Simon Robinson and Adalberto Arrigoni underline in their chapter focusing on SDGs, ethical identity, and the curriculum. They engage critically with the lacunae in the integration of sustainability and responsibility in the education for sustainable development. Their observation is that graduates identify insufficiently with ethical principles and values at an

organisational level, which they endeavour to address with a threefold proposal. First, they argue, a commitment to implementing values in practice needs to emerge from identification with them, and secondly, such an internalised ethical identity will have to be coupled with guidance to develop responsibility through three modes of deliberation, narrative development and dialogue. Thirdly, Robinson and Arrigoni describe the pedagogical context for an integrated approach to teaching ethics, which they use as a basis for unfolding a strategy on how ethical identity can be developed in the curriculum. One of the interesting aspects they present is that higher education and the curricular provisions do not only prepare *for* dialogue and critical engagement with diversity, but that dialogue is used and practised as an educational tool to cultivate a holistic and ethical sense of self in relation to others, which then becomes an appropriate link to the rationale of interrelatedness that the sustainable development goals are embedded in.

Driving Ethical Consciousness in Higher Education from Within

One may argue that this volume brings together a collection of differentiated analyses, mostly case-base oriented, which underline that the sustainable development goals in the context of higher education institutions and business schools are much more than an area for competence building. They constitute elements for facilitating an ethical consciousness in higher education from within. It is about introducing a theory of change, in the very complete sense of the word, preparing a new generation of leaders in academia and beyond for new societal roles. Nario Galace takes the reader into the context of a college-based centre for peace education in the Philippines and describes how the more permeable lines between academic formation, advocacy, and community engagement can become vital and mutually enforcing drivers for the

development of a peaceful culture. At the heart of such a stakeholder-based and action research-oriented engagement are conflict resolution and peacebuilding methods, which serve as a propitious basis for the sustainable development goals.

Cobus Oosthuizen's preoccupation is to address the criticism of a failed ethical skills transmission in South African business schools, indispensable for the role future leaders will have to take on in the world of business and the wider society. He elucidates the underlying reasons through research on MBA curricula and institutional mission, vision, and values statements. The benchmarking lens he uses is the UN-supported initiative of Principles for Responsible Management Education (UNPRME). Building intellectual capital for the country, as per Oosthuizen's argument, will have to be realised through a stronger integration of the SDG-agenda and ethical principles in education around purpose, values, method, research, partnership, and dialogue in the business schools themselves and across their respective stakeholder communities. This offers many entry points for an international debate with higher education institutions worldwide currently facing similar challenges related to aligning the SDG-agenda with an internal, values-driven education of transformative leader personalities.

Delport translates and revisits the sustainable development goals in the architectural education setting. In this chapter, education for sustainability is conceptualised as an integral part of an ecosystem, in which 'learning architecture' is not divorced of the other meaning-making instances in society and remains in relationship with the environment in which it endeavours to create sustainable living spaces. Combined attention is given to the architectural studio (Radically Inclusive Studio) and its role in supporting the development of an ethical consciousness through the pedagogical principles that emerge from an inclusive architectural praxis. An investigation that is conceptually supported by a comprehensive literature review and indications that

could be highly valuable, also for other sustainable development education ventures.

Conclusion

This collection does not aim to give a comprehensive overview on education for sustainable development nor on ethical leadership. However, it provides unique and profound insights from within educational institutions in diverse regions of the world on how 'learning outside' and 'learning inside' can be meaningfully integrated, so that the sustainable development agenda does not remain a static programmatic agenda, but a creative and permeable framework to develop meaningful, interdisciplinary curricula and research projects which serve the human community as a whole and advance knowledge in respect of the earth and the future generations who will inherit it. We invite the readers of this volume to engage together with us in a study and learning process on how our institutions can become conducive spaces for nurturing the awareness for an ethical leadership that emphasises care for the common good as guiding principle.

Amélé Adamavi-Aho Ekué
Geneva, April 2023

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LEADING ETHICAL LEADERS

This volume provides unique and profound insights from within educational institutions in diverse regions of the world on how 'learning outside' and 'learning inside' can be holistically integrated, so that the sustainable development agenda does not remain static and programmatic, but a creative and permeable framework. The shared hope across the thirteen chapters, which constitute complete original essays on the theme, is to develop meaningful, interdisciplinary curricula and research projects which serve the human community as a whole. The aim of the editors is directed towards a similar United Nations' valuable ideal: to advance knowledge in respect of the earth and the future generations who will inherit it.

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