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Island voices — island choices

Developing strategies for living with rapid ecosystem change
in small islands

Simon Rietbergen, Tom Hammond, Chucri Sayegh, Frits Hesselink and Kieran Mooney



Ecosystem Management Series No. 6

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TABLE OF CONTENTS

6	Acknowledgements
7	List of acronyms
8	Introduction
10	Background
16	Observations
18	Surveying the views of islanders and island experts
19	Analysis
30	Conclusions
32	Appendix 1: Best practice examples of environmental management initiatives
34	Appendix 2: Timeline of key events regarding international negotiations on SIDS
35	Appendix 3: Projects in SIDS funded by selected donor organizations
37	Appendix 4: Endnotes
39	References



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The authors.

LIST OF ACRONYMS

ADB	Asian Development Bank
AIMS	Africa, Indian Ocean, Mediterranean and South China Sea
AFD	Agence Française de Développement
AOSIS	Alliance of Small Island States
BPOA	Barbados Programme of Action
CBD	Convention on Biological Diversity
CI	Conservation International
COP	Conference of the Parties
CRISP	Coral Reef Initiative for the Pacific
DFID	United Kingdom Department for International Development
FAO	Food and Agriculture Organization of the United Nations
GEF	Global Environment Facility
GLISPA	Global Islands Partnership
IPCC	Intergovernmental Panel on Climate Change
JPOI	Johannesburg Plan of Implementation
NGO	Non Governmental Organization
TNC	The Nature Conservancy
UN	United Nations
UNDP	United Nations Development Programme
UNDESA	United Nations Department of Economic and Social Affairs
UNEP	United Nations Environment Programme
UNESCO	United Nations Education, Scientific and Cultural Organization
UNGA	United Nations General Assembly
SIDS	Small Island Developing States
ODA	Official development assistance
UN-OHRLLS	United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and the Small Island Developing States
WB	World Bank
WWF	World Wide Fund for Nature

INTRODUCTION

In a rapidly changing world, islands are both unique and highly vulnerable places. They support distinctive cultures, landscapes, and a diverse range of endemic species (see table 1), many of which are listed as vulnerable. Indeed, most of the world's documented extinctions are from islands. By their very nature, islands are increasingly susceptible to global environmental, economic and social changes perhaps more so than anywhere else on earth.

The development challenges that small island developing states face are numerous. Their small size, however, limits their development options – and often results in environmental impacts from development occurring in one ecosystem rapidly spilling over into another. This can be particularly catastrophic when coupled with the increasing frequency and intensity of major storm events.

Island economies are often based on only one or two sectors, commonly agriculture and tourism. This makes them highly susceptible to economic

shocks when compared to more diversified economies in larger countries. These shocks can often result in significant environmental repercussions. Their relatively small population sizes and comparatively low levels of development often mean that SIDS have limited human resources to meet these challenges and lack the required institutional capacity to adjust to emerging economic and environmental challenges.

In effect, islands are rapidly becoming the world's "canaries in the coal mine" of global change, laboratories for tracking the results of the stresses placed on ecosystems through development, and on the services these ecosystems provide. The fate of the world's small island developing states may well be indicative of the consequences of the economic path we are following, and also of the solutions to address these challenges.

Following a call from the IUCN Membership, IUCN (The International Union for Conservation of Nature) in partnership with the Italian Government

launched an initiative beginning in early 2006 to explore a programme of work for ecosystem management and restoration in small island developing states (SIDS). The initiative examined the socio-economic and environmental challenges facing islands, and the efforts over the past 20 years within the international community to address these challenges, surveyed the views of island residents and other key informants globally – both within and outside the traditional environmental community – and began scoping the most appropriate niche for IUCN in an island-focused conservation programme. The report which follows is the result of this effort.

Study methods and structure of the report

Background research was conducted on the current state of play in island-focused conservation and sustainable development efforts within the international community – from the Malé Declaration and the Barbados Programme of Action to the present. Consultation was also undertaken

Table 1. Known endemic species in selected small island developing states

Country	Endemic mammal species	Endemic bird species	Endemic plant species
Fiji	1	26	760
Jamaica	3	25	923
Mauritius	2	9	325
Palau	57	80	—
Solomon Islands	19	44	30
Trinidad and Tobago	1	1	236

Source: IPCC, 2001

within IUCN's board and diverse network – particularly among staff, Commissions, members and partners.

A questionnaire survey, developed in three stages, was also utilized to collect more dynamic and current data. First, a short scoping questionnaire was discussed in telephone interviews with 24 respondents who were selected to represent a broad range of stakeholders from all island regions and the international community. Analysis of the results of this effort led to a full-length questionnaire that was tested with 35 respondents during a ten-day scoping mission to Mauritius in May of 2006.

The questionnaire was subsequently redrafted and submitted to a final peer review. The text of the questionnaire was translated into French, Portuguese and Spanish, and sent out to over 1,000 potential respondents on a list generated with the assistance of IUCN members, Commissions and numerous partners such as the Global Islands Biodiversity Network and the Global Islands Voice.

The survey, conducted between November 2006 and January 2007, was available as an on-line questionnaire. For those with limited internet access, the questionnaire was also distributed by e-mail or post. The questionnaire tool can be viewed at: <http://www.wcln.org/surveys/public/survey.php?name=sidsEnglish>.

In order to allow for a more detailed analysis of the situation in small island states, for several of the questions, respondents were able to select up to three answers. This allowed respondents to raise a variety of issues.

This report first provides an overview of the results of the background research conducted. It then goes on to review and analyze the data arising from the global questionnaire, and concludes with observations and implications for an IUCN programme on small island developing states.



BACKGROUND

The United Nations Department of Economic and Social Affairs (UNDESA) classifies 51 countries as being small island developing states (UNDESA, 2007). These states are primarily located in three regions: the Pacific and Caribbean Oceans and what has been termed the AIMS area (Africa, Indian Ocean, Mediterranean and South China Sea) (UNDESA, 2007). While UNDESA maintains the above noted list of countries considered as small island states, no firm definition for SIDS exists (Fry, 2005).

Although small island developing states (SIDS) are often seen as a homogenous group of countries, there is considerable heterogeneity between them. Geographically speaking, many are not small. Others are highly developed, while others officially considered as SIDS are not strictly islands. Despite these differences, however, they do share many similarities – in particular their vulnerability to a variety of stresses, both of anthropogenic and natural origin (Fry, 2005).

As a result of their geographic location, physical morphology, direct exposure to hazards, often limited financial resources, remoteness (in many cases) and their unique social characteristics, SIDS have been found to be among the most vulnerable locations on earth¹ (Kaly, Pratt and Howorth, 2002; Pelling and Uitto, 2001). These same characteristics, in many instances, also represent major impediments to sustainable development.

Policy Context and Multilateral Processes

The development challenges faced by small island developing states have been increasingly recognized by the international community (refer to appendix 3). The vulnerabilities of SIDS and the impediments to sustainable development that they are confronted with have been expressed in several international declarations, programmes and strategies since the late 1980s.

One such example is the Malé Declaration, adopted in November 1989, during the Small States Conference on Sea Level Rise. Largely driven by the efforts of SIDS, the Malé Declaration was a recognition of the dual concerns generated by climate change and the prospect of sea level rise, and in particular underscored the threat that sea level rise posed to the survival of many small island and low-lying states (Fry, 2005). The declaration was a statement of the signatories' intent to work cooperatively in order to protect low-lying states from these threats. Later that year, during its 85th plenary session, the United Nations General Assembly (UNGA) referred to the Malé Declaration in a resolution², and the Parties to UNGA indicated their resolve to work in cooperation to address the threats created by climate change and sea level rise (UNGA, 1989).

In 1990 the Alliance of Small Island States (AOSIS), a coalition of small island and low-lying countries, was formed (AOSIS, 2007). Operating primarily within the context of the

United Nations, AOSIS serves as an ad hoc negotiating body for SIDS and promotes mitigating actions to address the environmental concerns and development obstacles that SIDS face. With a membership of 43 countries and observers³ (representing 28% of UN listed developing countries, and 5% of the total world population) AOSIS has become one of the main groups advocating for small island states at the international level (AOSIS, 2007).

Following the adoption of Agenda 21⁴ during the 1992 United Nations Conference on Environment and Development, a Global Conference on the Sustainable Development of Small Island Developing States was held from the 25th of April to the 6th May 1994 in Bridgetown, Barbados⁵. Much of the work conducted at this conference was based on the recognition of the unique development challenges and needs faced by many small island developing states, and it was emphasized that renewed focus on sustainable development was required to ensure the future prosperity of SIDS (UNGA, 1994). Therefore, while the issues of climate change and sea level rise were prominent throughout the Barbados Conference, they were by no means the sole issues addressed nor central to charting the policy direction forward.

One of the key outcomes to emerge from the Barbados Conference was the adoption of the Programme of Action for the Sustainable Development of Small Island Developing States, or as it is more commonly known,

the Barbados Programme of Action (BPOA). This document outlines a comprehensive plan of action at national, regional and international levels in 14 different priority areas (see box 1).

In 1999, the United Nations General Assembly convened a special session to review the implementation of the Barbados Programme of Action. During this session it was reaffirmed that the BPOA was the primary blueprint for sustainable development in SIDS, and that the vulnerability of SIDS to various anthropogenic and natural forces, including external economic shocks, globalization, trade liberalization and natural disasters, remained the fundamental issue of concern in these countries (UNDESA, 2005). It was also observed that despite the progress that had been made in implementing the BPOA the severe lack of resources⁶ remained a major obstacle to the continued implementation of the Programme. Representatives from several non SIDS developing countries pledged to increase South-South cooperation to help overcome these financial limitations, while a number of donor countries indicated that they were willing to increase the amount of official development assistance (ODA) that SIDS received.

During the meeting the General Assembly also adopted a declaration calling on the international community to provide SIDS with the means to pursue sustainable development initiatives and targets, as well as

requested the Secretary General to improve existing institutional arrangements such that sustainable development in SIDS could be more easily supported. The document “State of Progress and Initiatives for the Future Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States” was also tabled during this meeting (UNDESA, 2005). In this document the need for implementation of the BPOA was once again emphasized, along with six areas requiring urgent attention – including natural and environmental disasters, climate variability, freshwater resources, coastal and marine resources, energy and tourism (UNGA, 1999).

Issues relevant to small island developing states were again brought to the fore during the Millennium Summit in 2000. The Millennium Declaration reiterated the commitment of world leaders to implement the Barbados Programme of Action and the outcomes of the 5-year review of the BPOA (UNGA, 2000).

Many of the issues addressed in the BPOA were revisited and reiterated during the World Summit on Sustainable Development held in Johannesburg in 2002. In particular, the Johannesburg Plan of Implementation (JPOI) included a chapter on SIDS in which it was noted that although SIDS continued to advance on issues related to sustainable development, these efforts remained constrained by

Box 1 **Main components of the Barbados Programme of Action**

- Climate change and sea level rise
- Natural and environmental disasters
- Management of wastes
- Coastal and marine resources
- Freshwater
- Land
- Energy
- Tourism
- Biodiversity resources
- National institutions and administrative capacity
- Human resource development
- Regional institutions and technical cooperation
- Transport and communication
- Science and technology (UNGA, 1994)

Source (UNDESA, 2005)

the factors identified in Agenda 21, the BPOA and the special UNGA session held in 1999 (UNDESA, 2004). Further, while the WSSD process reiterated many of the issues previously identified in the BPOA, it also introduced several new topics – including most prominently HIV/AIDS (UNDESA, 2004). A comprehensive review of the BPOA was called for during the summit, and subsequently endorsed during the 57th Session of the United Nations General Assembly⁷.

The in-depth review of the Barbados Programme of Action took place in Mauritius in 2005. As the meeting was held soon after the 2004 Indian Ocean tsunami, considerable emphasis was placed during the meeting on disaster management (UNOHRLLS, no date).

The review also underscored that SIDS were shouldering the majority of the burden associated with the implementation of the Programme of Action. This was despite the fact that many SIDS were being confronted with additional international commitments as a result of globalization and other related multilateral processes.

Further, it was noted that since 1994 there had been an overall decline in ODA funding, and that a lack of international cooperation, resources and technology were severely curtailing further implementation of the Programme of Action. Coordination amongst stakeholders (including duplication of effort) particularly between regional bodies, UN systems and multilateral organizations, was also found to be a significant issue affecting progress (UN, 2005).

Though the unique vulnerabilities and development challenges that SIDS face were clearly stated in the 1994 BPOA, the ten-year review concluded that there continued to be a lack of international commitment on these issues (UN-OHRLLS, no date). Speaking on the implementation of the BPOA, then UN Secretary-General Kofi Annan noted that “On the whole, implementation of what was agreed and promised at Barbados remains disappointing at best. And in the meantime, new challenges have emerged... So what was, a decade ago, an already pressing small islands agenda, has become even more urgent and daunting” (UN-OHRLLS, no date).

Two important documents emerged from the Barbados Programme of Action. One was the Mauritius Declaration, which reaffirmed the validity of the Barbados Programme of Action and reiterated the international community’s commitment to it. The other was the Mauritius Strategy for the Further Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States. This document reiterated and further elaborated on many of the issues raised in the BPOA, but also broadened the scope considerably by adding new areas of focus (see box 2). It was also recognized that for activities to be implemented in these priority areas increased levels of financial and other resources would be required as would better opportunities for trade, access to environmentally sound technologies, a greater emphasis on education and awareness-raising, capacity building, and country-specific and nationally-driven sustainable development strategies.

Following the in-depth review of the Barbados Programme of Action, the Conference of the Parties (COP) to the Convention on Biological Diversity (CBD) during its seventh meeting in Curitiba, Brazil in 2006, also adopted a programme of work on island biodiversity (CBD, 2007). The CBD’s programme is wide ranging, identifying seven focal areas with a total of 11 goals and 50 associated priority actions. Similar to the priority areas of the Convention, the seven focal areas

include the protection of biodiversity, the promotion of sustainable use, addressing threats to biodiversity, maintaining goods and services derived from biodiversity, protection of traditional knowledge, ensuring the fair and equitable sharing of benefits from the use of genetic resources, and ensuring the provision of adequate resources (CBD, 2007).

Most recently, during the 24th session of the United Nations Environment Programme’s Governing Council, the particular vulnerability of small island developing states to the effects of environmental degradation (especially the effects of climate change) was again noted and the Executive Director was requested to elaborate further UNEP activities to mainstream the Mauritius Strategy and to establish a special desk for issues related to SIDS⁸ (UNEP, 2007).

Box 2
New areas of focus of the Mauritius Declaration

- Climate change and sea level rise
- Graduation from least developed country status
- Globalization and trade liberalization
- Sustainable capacity development and education for sustainable development
- Sustainable production and consumption
- National and regional enabling environment
- Health
- Knowledge management and information for decision making
- Culture and implementation (UN, 2005)

Development Assistance and SIDS

Since the establishment of the Barbados Programme of Action it has been recognized that limited financial, human and technological resources remain major impediments to sustainable development in many small island developing states. In order to mitigate this problem several multilateral and bilateral funding agencies have provided funds to support projects in these countries (see appendix 3).

The Global Environment Facility (GEF), as one of the major international donors assisting developing countries in funding projects to protect the global environment, has several projects related to small island developing states specifically and islands more generally. Between the time of its establishment in 1991 and 2005, the GEF has directly provided \$365.1 million (leveraging an additional \$571.6 million in co-financing) to more than 200 projects in small island developing states (GEF, 2005). These projects varied from enabling activities and medium sized projects to full sized projects and were conducted in a variety of focal areas including biodiversity, climate change, land degradation, international waters and persistent organic pollutants. Specifically related to enabling projects, as of 2005 the GEF had funded 71 projects related to biodiversity (\$21.6 million), 52 related to climate change (\$16.2 million)

and 19 related to persistent organic pollutants (\$7.2 million) for assisting small island developing states in meeting international obligations such as those resulting from participation in the Convention on Biological Diversity and the United Nations Framework Convention on Climate Change (GEF, 2005).

A second major multilateral funding agency assisting small island developing states is the World Bank, which has provided funding for (*inter alia*) many projects to help alleviate poverty, promote trade and support sustainable urban development. While the World Bank does not have a programme specifically related to SIDS, it does have a programme related to small states. Of the 45 small states that the World Bank identifies, 34 are islands (World Bank, no date). A review of current and pipeline World Bank projects indicates that more than 110 projects are either underway or planned in SIDS, with a total approximate value of \$1.4 billion⁹. One of the most recent examples of these types of projects is a decision by the World Bank's Board of Executive Directors to approve \$9.5 million in spending to support renewable energy in several small island states including Fiji, Papua New Guinea, the Republic of the Marshall Islands, the Solomon Islands and Vanuatu (World Bank, 2007).

The Asian Development Bank (ADB) also does not have a specific programme related to SIDS, but

nonetheless represents a significant donor for small island developing states in the region – particularly Oceania. Further, the ADB's "Pacific Strategy for the New Millennium" also addresses issues, needs and challenges related to small developing states¹⁰ (ADB, 2007). According to the ADB's project database there are currently in excess of 450 active projects in SIDS in a variety of sectors.¹¹

Aside from the multilateral funding agencies, numerous bilateral aid organizations provide support to SIDS¹². For example the Canadian International Development Agency has over 200 operational and planned projects in SIDS. The United Kingdom's Department for International Development (DFID) has 74 projects¹³ either underway or in planning and the Agence Française de Développement (AFD) has five signed projects¹⁴. In addition, the Dutch Ministry of Foreign Affairs through its Development Cooperation division provides significant funding to a number of "island" states, including Comoros and Suriname. However, while these donors provide significant resources to small island developing states, none of them have funding programmes or initiatives targeted specifically at SIDS as a specific programmatic focal area.

Ongoing work

UN Programmes and Agencies

Given the needs outlined in the BPOA and the Mauritius Strategy, a variety of UN agencies have been carrying out work directly or indirectly relevant to the SIDS agenda. The Food and Agriculture Organization of the United Nations (FAO), for instance, addresses the needs of SIDS by providing assistance on issues related to fisheries, forestry and agriculture. In particular, the FAO seeks to enhance the contribution of these areas to the development of small island states and poverty alleviation by promoting sustainable food policies and programmes (FAO, 2007).

The United Nations Education, Scientific and Cultural Organization (UNESCO) also has a programme of work on SIDS. UNESCO has conducted activities relevant to small island developing states for more than 30 years (UNESCO, no date). These activities have been focused on education, environment and resource use, natural and social sciences, culture and communication. Following the 1994 Barbados Conference, UNESCO developed an “Intersectoral Coastal Regions and Small Islands Platform” which provides information relating to sustainable living in small islands, planning for coastline change, traditional knowledge and management, poverty reduction, and best practice in freshwater management. UNESCO further supports the sustainable development

of small island states through its “Small Islands Voice” initiative, which allows for the inhabitants of island communities to be heard and provides a method for exchanging knowledge and information. Further, the initiative has brought communities, interest groups and island populations together in order to help develop the capacity to implement SIDS sustainable development plans.

The United Nations Environment Programme (UNEP) is currently undertaking a variety of projects related to small island developing states. These activities are carried out in several priority areas, the majority of which correspond to those outlined in the Mauritius Strategy (UNEP, 2006). UNEP currently lists over 900 ongoing and completed projects related to small island states¹⁵.

The United Nations Department of Economic and Social Affairs (UNDESA), through its Division for Sustainable Development, reviews the implementation of the BPOA and the Mauritius Strategy. The SIDS unit of the Division for Sustainable Development was first formed in 1995, and since that time it has provided support to the monitoring of the BPOA, served as a focal point and prepared reports on its implementation, as well as supported activities resulting from the BPOA (UNDESA, 2006).

Established in 2001, the United Nations Office of the High Representative for the Least Developed Countries,

Landlocked Developing Countries and Small Island Developing States (UN-OHRLLS), undertakes a variety of activities related to SIDS. In particular the UN-OHRLLS, in cooperation with relevant organizations, conducts advocacy work on behalf of SIDS, and aids in obtaining international support and resources for the further implementation of the Programme of Action and supports group consultations of SIDS (UNOHRLLS, no date).

The United Nations Development Programme (UNDP), through its Capacity 2015 initiative, also promotes sustainable development in small island developing states. Capacity 2015 seeks to build local capacity to achieve the Millennium Development Goals through, among other initiatives, partnership building. Of particular relevance for SIDS, Capacity 2015 will seek to reduce vulnerability and increase resilience in natural resource management, energy, health, agriculture/food security and natural disasters. Further, the work which Capacity 2015 undertakes is based on a recognition of the multiple factors which contribute to the vulnerability of SIDS, and the unique development circumstances in each small island developing state (UNDP, no date).

Civil Society

Numerous environmental nongovernmental organizations (NGOs) are currently addressing issues directly and indirectly related to the sustainability of small island developing

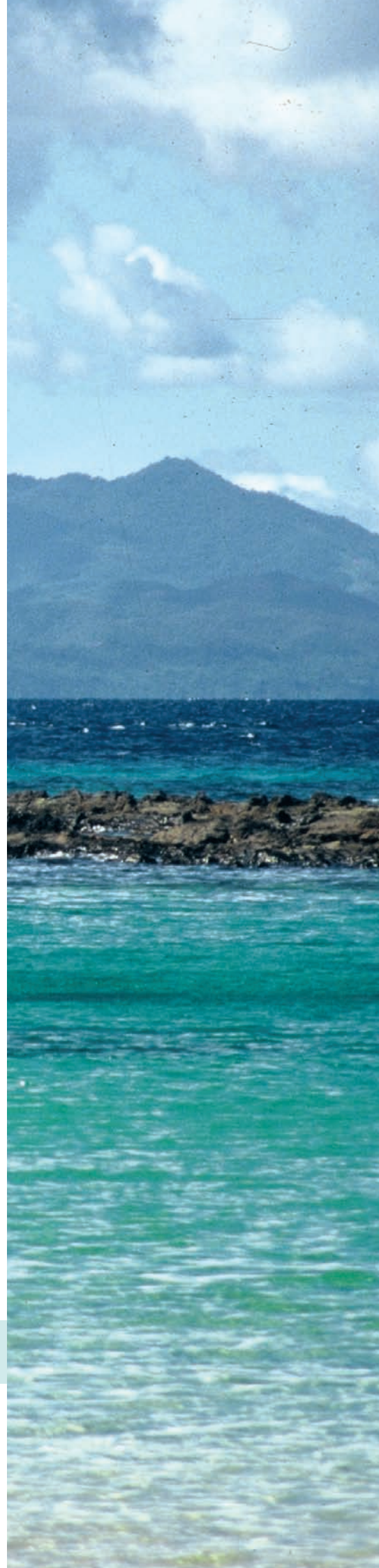
states. Owing in part to the high rates of endemism on many islands and the relatively large territorial waters that SIDS have claim to, environmental NGOs have been particularly active in these areas.

An important step in the conservation and sustainable development of small island states has been the formation of the Global Islands Partnership (GLISPA) which was first called for in 2005 by the President of the Seychelles and was officially launched at the eighth meeting of the Conference of the Parties to the Convention on Biological Diversity in Curitiba, Brazil in March 2006 (The Nature Conservancy, 2006). Within a year, the partnership consisted of more than 20 countries and more than 20 international, national and local organizations. The overall goal of GLISPA is to:

“Conserve the world’s unique island biodiversity, significantly reduce the rate of biodiversity loss and advance

sustainable livelihoods on islands through a global island partnership that builds political, technical and financial support; rapidly shares skills, information and resources; and accelerates on-the-ground action” (CBD, 2007).

GLISPA seeks to achieve this goal by linking local, national and international activities and by building from existing initiatives. In particular, the partnership aims to assist leaders who are promoting conservation and sustainable development, use international events to highlight the special needs of SIDS, stimulate partnerships to improve conservation capacity, engage donors to gain access to greater financial resources for the conservation of islands, facilitate information sharing, and promote collaboration between island nations and nations that have islands (CBD, 2007).





OBSERVATIONS

On reviewing the ongoing work related to small island developing states and the progress of international negotiations on this issue, several observations emerge. At the level of the United Nations there has been a clear recognition of the vulnerability of small island states as well as a recognition of the challenges to sustainable development that they face. While the Barbados Programme of Action has consistently and repeatedly been seen as an important blue print for sustainable development, it has also been noted that without assistance from the international community many SIDS will be unable to implement it fully, owing to their low levels of human capacity, financial and technical resources. However, despite this lack of resources, many SIDS have taken significant steps (for examples, please see appendix 1 and the list of success stories compiled by the Small Island Developing States Network available at <http://www.sidsnet.org/successstories/index.html>).

Though numerous governments have expressed their commitment to the Barbados Programme of Action, the Mauritius Strategy and small island developing states in general, for the most part it does not appear as if these commitments have been translated into meaningful, ground level or practical actions. Further, while many projects and programmes have been implemented, the exact impacts of these with regards to sustainable development are in most instances unclear.

Policy Coordination

The information available on the websites of organizations dealing with small island states is, in many instances, out of date and there is considerable duplication of information between organizations. Moreover, there appears to be a significant lack of coordination between the diverse array of UN agencies, donors, multilateral agencies and civil society organizations operating in this area, an observation previously made during the 10-year review of the Barbados Programme of Action in Mauritius in 2005 (UNOHRLLS, no date).

It is currently unclear who most appropriately represents SIDS on the international stage. The SIDS unit of UNDESA indicates that its role is to help review the implementation of the Barbados Programme of Action, as well as to serve as a focal point or liaison for governments, agencies and organizations related to the implementation of the BPOA. UNOHRLLS, on the other hand, has a mandate to advocate for SIDS and to assist in mobilizing resources for the implementation of the BPOA. The role of AOSIS, furthermore, is to serve as an ad hoc negotiating body for SIDS at the level of the United Nations. In addition, the specific roles of the newly established CBD programme of work on island biodiversity and the Global Islands Partnership within this context remains unclear.

Programme Coordination

There are a variety of funding agencies and sources available to small island developing states. These donors are important for the further implementation of the BPOA and sustainable development projects in general as they provide highly needed funds. However few funding agencies have specific “windows” addressing the special needs of small island developing states. A similar situation is found with civil society organizations. While a number of prominent non-governmental organizations are undertaking work related to small island developing states, in reality few have programmes targeted specifically at SIDS. Most NGOs appear to be working on areas related to biodiversity conservation, protected areas, invasive species and climate change, which may have advantages to many SIDS, but in most cases these are not directly or explicitly linked to the agenda laid out in the Barbados Programme of Action and Mauritius Review.

Climate Change

Clearly, the impacts of climate change such as sea level rise are now squarely on the international agenda. It has been noted, of course, that SIDS in particular, given their often low elevations, will be profoundly affected by sea level rise¹⁶. Increasingly, leaders and policy makers in island countries are often framing their calls for greater assistance in addressing the unique needs of SIDS in this context.

However though climate change is obviously a threat to the sustainability and survival of many small island states, it is only one of several complex development challenges confronting SIDS. While climate change arguably represents one of the most important contexts for framing this discussion, paradoxically the priority development challenges most cited often refer to the more immediate problems of managing rapid ecosystem and environmental change often brought on by development and globalization. While the concerns related to climate change and sea level rise have been clearly presented in the BPOA

and the Mauritius Strategy, both of these documents address a variety of issues ranging from tourism and waste management to freshwater and transportation.

Clearly, the forces driving climate change are largely beyond the control of small island states. One study suggests that as a group small island developing states are responsible for producing less than 0.1 per cent of global greenhouse gas emissions (Nurse and Moore, 2005). Similarly the Pacific islands, despite constituting 0.12 per cent of the world’s population, only release 0.003 per cent of the world’s carbon dioxide stemming from fuel combustion (IPCC, 2001). Therefore while the governments of small island developing states are acutely aware of the threat climate change poses¹⁷, they also recognize that the most pragmatic action they can take to address this threat is through more effective management of the development process, and improving ecosystem resilience to change¹⁸.

SURVEYING THE VIEWS OF ISLANDERS AND ISLAND EXPERTS

Who responded?

A total of 313 responses to the survey were received, a response rate of over 30% – with responses coming from all the world’s island regions (see figure 1). A total of 121 respondents (39%) came from 35 out of the 51 countries on the UN list of small island developing states. A similar number were received from respondents in territories and small island states not formally included on the UN list¹⁹. Distribution across the four major island regions globally – the Caribbean, West African islands, the Western Indian Ocean, and Oceania – was fairly even. The fifth category of “global” respondents were those with significant expertise in small islands, however were not currently resident in either a country or territory considered a small island

state. Analysis of the results confirmed that responses received from SIDS (i.e. the UN list) were very similar to those received from other islands and those from the “global” cohort.

In addition, a broad range of stakeholder groups from a wide variety of sectors responded to the survey, many beyond the traditional constituency of the conservation community. Three groups accounted for over half of the responses, as illustrated in figure 2 (NGOs 25%, national governments 19%, and educational institutions 14%).

Most contributions to the survey had one element in common: Independent of location and economic status, the responses clearly indicated

that islands were struggling with similar environmental, economic and development issues, and that local capacity constraints represented a fundamental and universal constraint to addressing these problems. Moreover, it rapidly became clear that respondents were eager to make their voices heard.

A notable proportion of respondents had some affiliation with IUCN. Roughly 15% of respondents were affiliated with an IUCN member organization, while 25% list membership in one or more IUCN Commissions. Analysis of data from both within and outside of this IUCN constituency resulted in very limited variation in the survey response.

Figure 1. Distribution of respondents by region

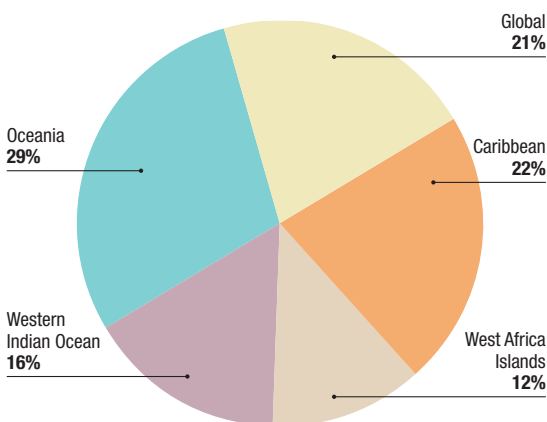
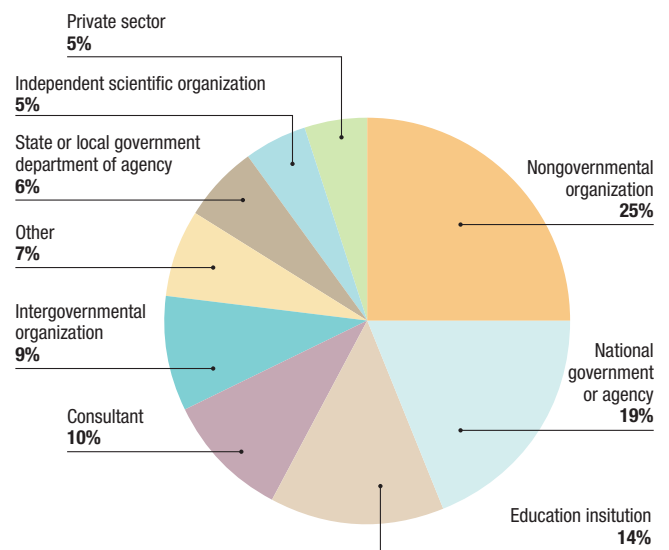


Figure 2. Respondents’ backgrounds



ANALYSIS

Rating the most important quality of islands

Respondents were asked to identify what they considered the most important qualities of islands. The fact that biological diversity and unique island land and seascapes are reported as the most important quality of islands is interesting given the non “environment” profile of many of the respondents. Perhaps more interesting is the high score of tourism (60%) in comparison to other issues, and the relatively high scores given to cultural issues (unique cultures 49% and traditional knowledge 33%) (see figure 3).

The latter appears to underscore that in considering conservation interventions in islands, rather than taking culture into account as an afterthought, it would be prudent to consider cultural issues as a key entry point

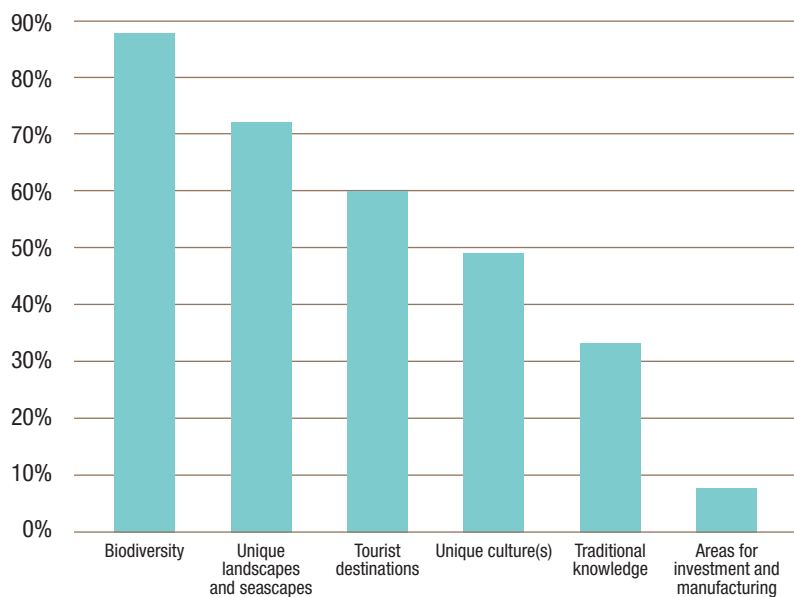
for working with island constituencies in environment and sustainable development.

Island Ecosystem Services

Respondents were also asked what they see as the most important goods and services provided by island ecosystems.

Freshwater, mentioned by 75% of respondents, is clearly a critical ecosystem service to islanders. The results do not specify whether this reflects concern about freshwater supplies or demand, but other sources indicate that even islands in high rainfall zones are experiencing significant freshwater scarcity, or are headed in that direction due to increasing consumption and also as a result of changing climatic patterns²⁰. Also noteworthy are three issues which score relatively high – namely

Figure 3. Most important qualities of islands



Box 3

Respondents' perspectives related to the most important services provided by island ecosystems

"In a place where 85% of the population lives a subsistence life, all of these ecosystem services are equally important. Most locals would value the fishery, timber and local foods."

"Nature is all we have. It is our food, our housing, our livelihoods. We don't have a single factory, or a university and only one hospital for the entire country, which has no medicine, so we have only plants and herbs."

the importance of these services to maintain attractive destinations for tourism, fisheries and coastal defences from storms or tidal surges (see figure 4).

Many respondents commented that all of their island ecosystem services were essential, and that it was very hard to single out even three of them as being more important than the others. A range of ideas and perspectives on island ecosystem services were shared by respondents (see box 3).

Specific socio-economic context of islands

Respondents were asked what they see as the most urgent or pressing socio-economic issues which must be addressed in small islands.

Figure 5 illustrates that the following three issues were reported the most:

- Poor governance,
- Lack of well-trained people,
- Lack of employment/jobs.

Figure 4. Most important services that nature provides

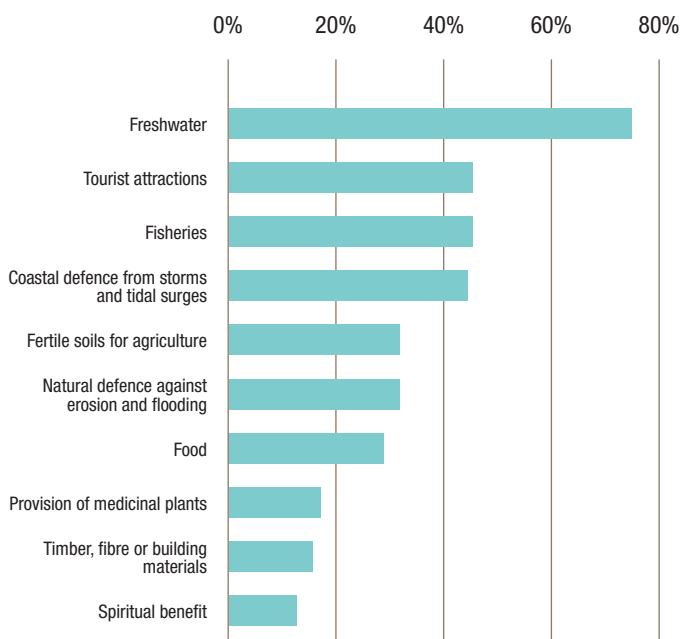
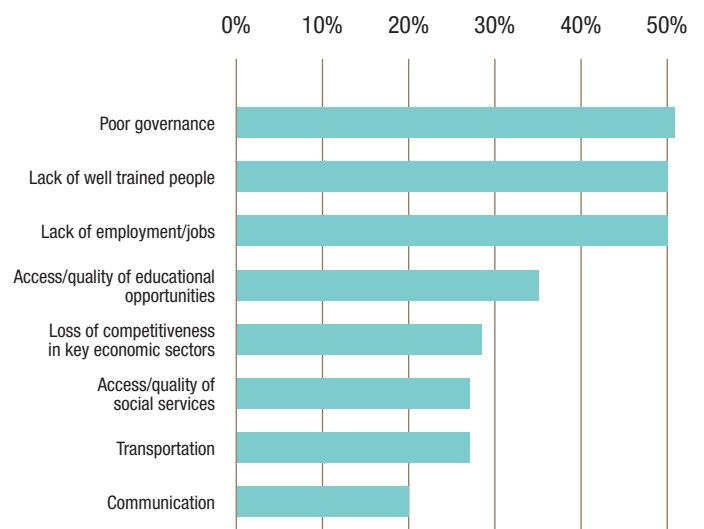


Figure 5. Most urgent socio-economic issues



This result, however, masks a certain degree of variance among the four main SIDS regions (see figure 6 and table 2) although in most cases these regional differences are illustrated through a re-shuffling of the top three issues noted above. For instance, poor governance is the most urgent socio-economic issue in the Caribbean, whereas lack of well-trained people is noted as the top issue in Oceania, and both this issue and the lack

of employment/jobs is cited in the Western Indian Ocean region. For the West African islands, however, transportation tops the list as the most urgent socio-economic issue. Other important issues raised by respondents through narrative responses include:

- Housing (high competition for available housing resources between permanent inhabitants and secondary residents);

- Integration of women in decision making;
- Multiple responsibilities concentrated in a small number of administrative units, with limited capacity;
- Lack of, or poorly adapted, environmental legislation.

Figure 6. Most urgent socio-economic issues per region

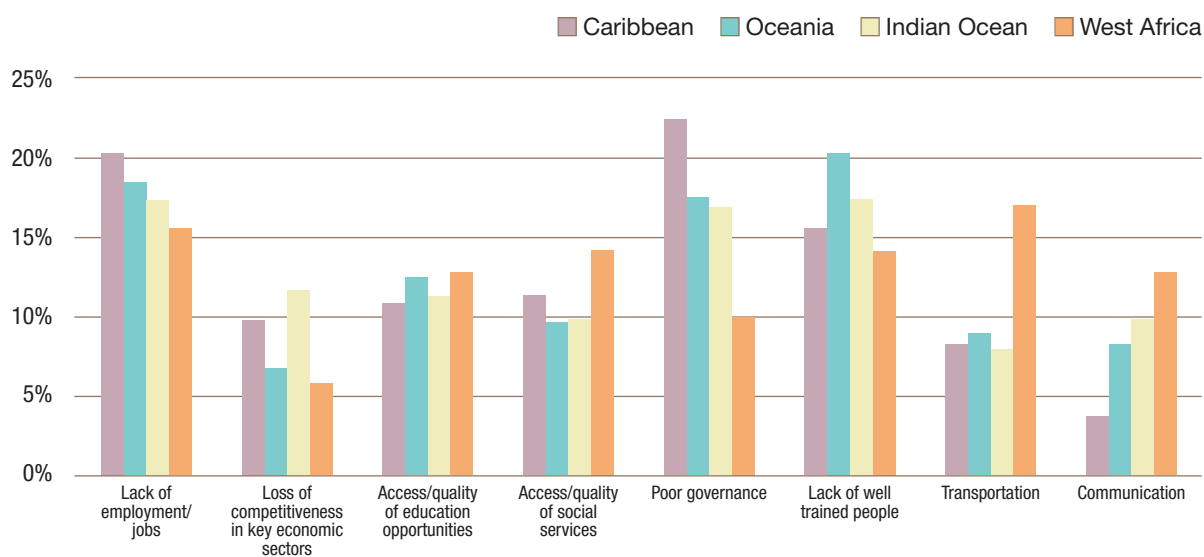


Table 2. Socio-economic priority issues in each region

Region	1 st priority	2 nd priority
Caribbean	Poor governance	Lack of employment
Oceania	Lack of well trained people	Lack of employment
Indian Ocean	Lack of well trained people	Lack of employment
West Africa	Transportation	Lack of employment

Most urgent environmental issues

Survey respondents were also asked to identify the most urgent environmental issues facing islands (again respondents were given the opportunity to make up to three selections).

While there was no overwhelming preference in this area, respondents viewed destruction of coastal ecosystems, such as coral reefs and mangroves, as the most urgent issue to address (see figure 7). More than 50% of all respondents also selected land degradation and waste disposal as the most environmental urgent issues. It is interesting to note that climate change scores substantially lower at

39%, although awareness about its potential impact is high and there is a clear sense of urgency regarding the consequences of climate change (see box 4).

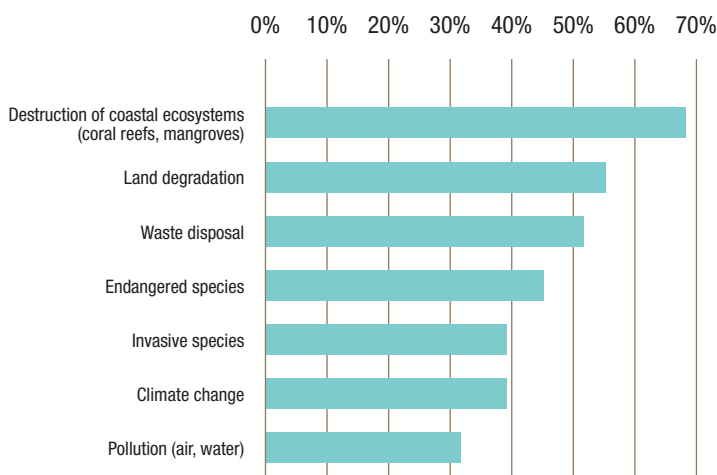
Again, differences in responses between regions are important to consider (figure 8 and table 3). Climate change barely registers in West Africa, while respondents there rate the issue of endangered species much higher than in other regions. While destruction of coastal ecosystems comes out the highest amongst all regions, this issue rates significantly higher in West Africa and the Caribbean.

What are the most important direct pressures on the environment?

Respondents were asked to identify the most direct pressures impacting island environments.

Unplanned or poorly planned development, whether industrial, urban, or within the tourism industry, rates high – and arguably could be considered a single overarching issue of concern (figure 9). Other direct pressures include over-fishing (cited by 47% of respondents) and population growth and/or migration (42%).

Figure 7. Most urgent environmental issues



Box 4

Respondents' perspectives related to the most urgent environmental issues in islands

"Island systems, which have limited resilience, are in the front line with respect to global change and constitute laboratories for adaptation strategies."

"We suffer bad governance and inability to protect the environment for lack of resources and human capacity. Our Department of Environment has seven employees and a monthly budget of \$300 which does not even cover decent salaries... certainly no ability to protect the environment."

Figure 8. Most urgent environmental issues facing islands, per region

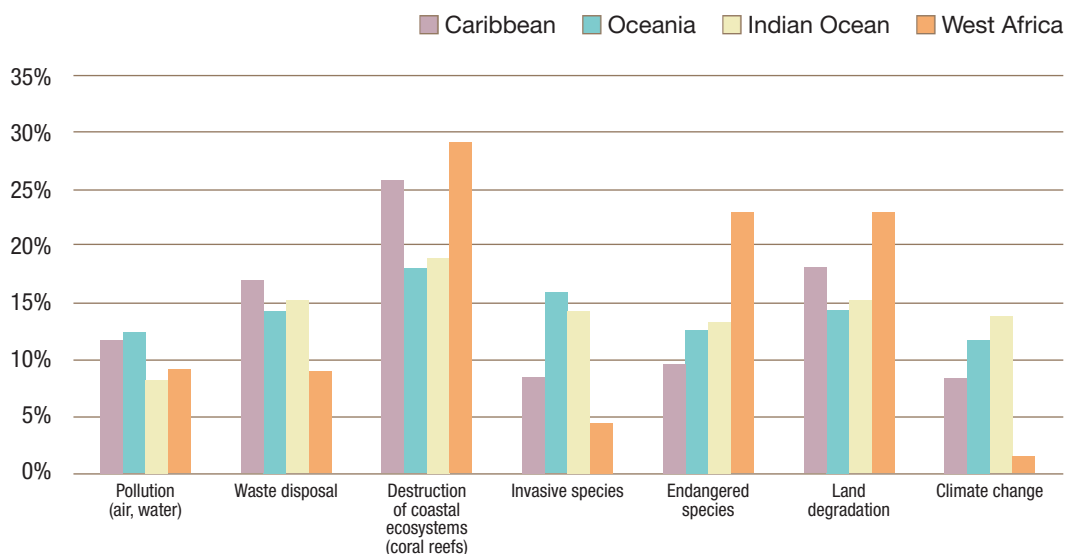
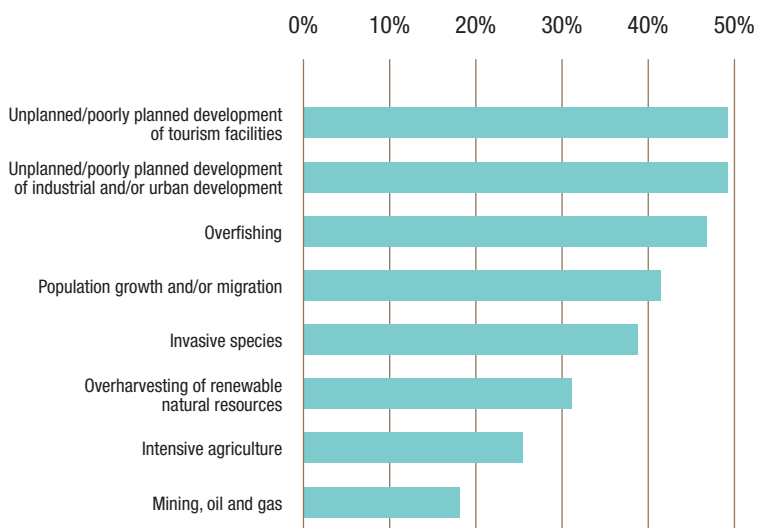


Table 3. Environmental priority issues in each region

Region	1 st priority	2 nd priority
Caribbean	Destruction of coastal ecosystems	Land degradation
Oceania	Destruction of coastal ecosystems	Land degradation
Indian Ocean	Destruction of coastal ecosystems	Land degradation
West Africa	Destruction of coastal ecosystems	Land degradation

Figure 9. Important direct pressures on the environment



Here again, there was significant regional variation in responses (see figure 10 and table 4). For example, unplanned/poorly planned development of tourism facilities is listed as the most important direct pressure in the Caribbean and the Western Indian Ocean, while conversely this issue is rated fairly low in Oceania. Invasive species, on the other hand, is listed as the most important direct pressure on the environment in Oceania, but is only sixth or seventh in the other regions. Narrative provided by respondents related to this question was rich and varied (see box 5).

Constraints and barriers to addressing these direct pressures

When asked what are the most important constraints or barriers that islanders face in addressing these direct pressures on the environment, a majority of respondents answered: “poor understanding of environmental problems, or their root causes” (see figure 11). The following additional factors were also rated as significant barriers to effectively addressing pressures on the environment:

- insufficient control over development decision making;

- lack of financial resources;
- inadequate local capacity;
- poor governance.

It is interesting to note that although “inadequate local capacity” is considered an important constraint (42%), this does not seem to be due to lack of local training facilities or institutions of higher education, which only scores 17%. This could well indicate a “brain drain” of more highly trained individuals as a leading cause of shortages in capacity.

Figure 10. Most urgent environmental issues per region

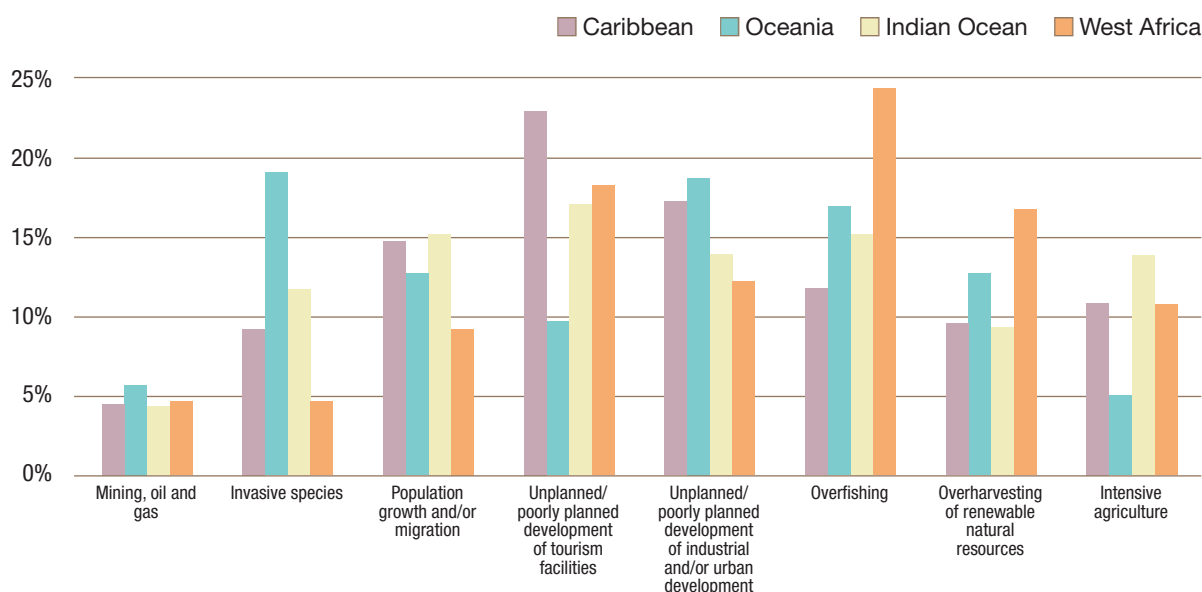
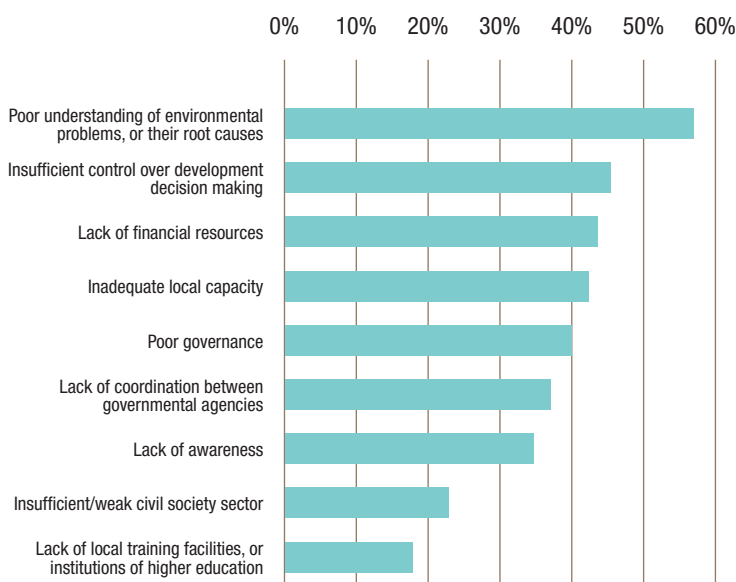


Table 4. Most important direct pressures on the environment

Region	1 st direct pressure	2 nd direct pressure
Caribbean	Unplanned/poorly planned development of tourism facilities	Unplanned/poorly planned development of industrial and/or urban development
Oceania	Invasive species	Unplanned/poorly planned development of industrial and/or urban development
Indian Ocean	Unplanned/poorly planned development of tourism facilities	Population growth and/or migration
West Africa	Overfishing	Unplanned/poorly planned development of tourism facilities

Figure 11. Most important barriers to addressing direct pressures on the environment



Box 5

Respondents' perspectives related to the direct pressures on the environment in island countries

“Agriculture as it is taught here is based on utilization of high levels of pesticides (to kill parasites) and chemical fertilizers whereas I’m sure that there are natural alternatives we could use if the will existed to do this.”

“(Re: agricultural practices) a lack of control of run-off of poisons provoking contamination from the high watersheds to the coastal zone.”

“Soil erosion caused by poor agricultural practices – or by unplanned/poorly planned management of waterways (rivers, canals, streams, culverts, reservoirs, etc.) which causes damage during floods and hurricanes.”

“Our fishing and forestry activities may not involve over consumption as much as consumption in inappropriate ecosystems insufficiently managed and with limited enforcement capacities.”

“The illegal entry of mechanized and technologically advanced foreign ships into the Exclusive Economic Zone of the islands has started creating changes in the availability of deep sea fishes. The death of corals due to a combination of factors is causing a sudden drop in availability of bait fishes for tuna fishing which is the major occupation on the islands.”

A number of regional differences are worth noting (see figure 12 and table 5). Lack of coordination barely registers as an issue in West Africa, while it is third highest in Oceania. A lack of training facilities does not appear to be a major issue in the Caribbean and Oceania, while it is significant in West Africa and the Western Indian Ocean. One respondent noted that:

“The major barrier is the low level of acceptance that the present direction of development will lead to environmental disaster as has happened on many other islands. We need to approach the problem from the perspective of change management – and as such need leadership, collaboration a shared vision, and concrete examples of how to move forward as the basis for changing the conservation and development model in the islands.”

Strengthening local capacities

The perceived need to strengthen local capacities in small islands, and allow islanders to manage the challenges they have underscored above, seems an urgent priority. A significant majority – 67% of respondents – are of the opinion that strengthening local capacity is very urgent, while a further 33% considers it urgent. No significant difference between different stakeholders and regions was noted on this issue.

Respondents were often passionate in how they underscored the urgency in this area (see box 6).

Key entry points for strengthening local capacities

In light of the above, respondents were asked to identify the key entry points or processes which exist for strengthening local capacities related to the priority environmental challenges identified.

Table 5. Major barriers to addressing environmental pressures in each region

Region	1 st barrier	2 nd barrier
Caribbean	Poor understanding of environmental problems or their root causes	Inadequate local capacity
Oceania	Poor understanding of environmental problems or their root causes	Inadequate local capacity
Indian Ocean	Inadequate local capacity	Insufficient control over development decision making
West Africa	Lack of financial resources	Poor understanding of environmental problems or their root causes

Figure 12. Most important barriers, per region, to addressing the direct pressures on the environment

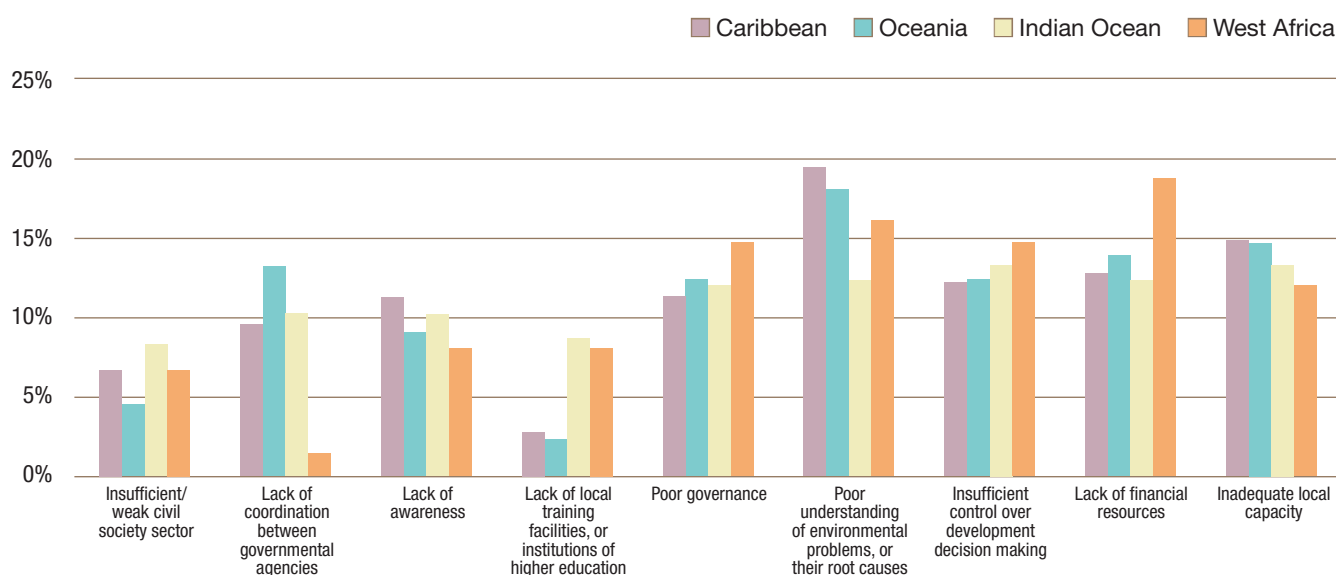


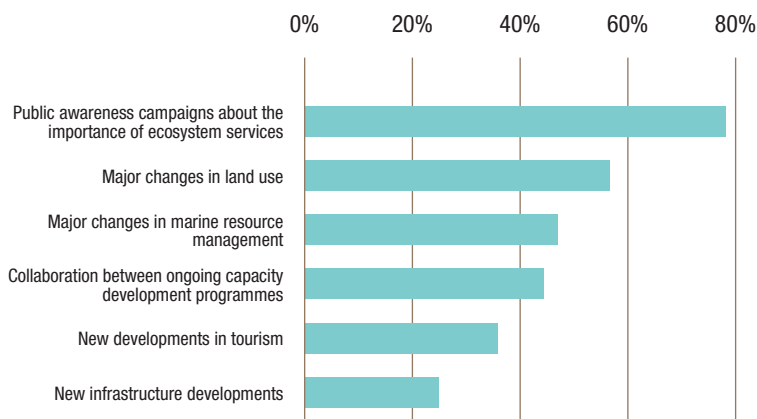
Figure 13 would suggest that raising public awareness is a major entry point for programme development. Tools and approaches suggested in the comments that many respondents submitted with their questionnaires included making most effective use of recent advances in IT for distance learning, targeting awareness raising activities at decision makers, and developing better cooperation with the private sector in awareness raising and education campaigns.

Where does capacity building need to be targeted?

Respondents were asked to identify those groups that they feel are key to change, and would benefit most from strengthening their capacities in environmental issues in general – and ecosystem management and restoration.

Decision makers in government and private sector are seen as primary target groups. At the same time, respondents noted that a broad level of awareness raising amongst the general

Figure 13. Key entry points for capacity strengthening in ecosystem management and restoration



Box 6 Respondents' perspectives on strengthening local capacities

"It requires deep knowledge and understanding, not just simple technical skills. Capacity is required to develop integrated approaches that work on many aspects of interdependent systems at once. This is a tall order, but any less leads to what we have now."

"Local capacity is urgently needed to address ongoing environmental problems. Often outside capacity is imported which is very expensive and always leave with the knowledge."

"The local capacity (i.e. human resources) to deal with the main problems exists in country. What is lacking is the real political will to deal with the problems."

"A small island can be completely transformed in a very short space of time given modern technology and increased communications/transportation. We are not learning quickly enough how to achieve sustainable development before critical ecosystems are degraded. These changes might be irreversible, and certainly prevention will be cheaper than restoration."

"Well qualified and skilled environmental practitioners are leaving the island states to seek career development opportunities elsewhere (i.e. an enabling environment and career development opportunities are not created to retain expertise in the country)."

public is equally as important (see figure 14). One respondent saw the issue as much more fundamental:

“Our political system is totally centralized. NGOs cannot do much: no resources. The government is the main employer. People go to work but have nothing to do because they don’t have electricity, the ministers are so lacking in capacity that they pretend to make policies, but are clueless. We must influence the decision makers in parliament, the government, the presidency and ultimately create public opinion among “the people” to vote for people who will manage better.”

The substance of capacity building

Respondents were asked what improvements to technical/skill areas are needed most to address the key challenges they are facing.

The data illustrated in Figure 15 suggests that priority content areas for strengthening capacities are: scientific/technical skills in monitoring changes in ecosystems, and integrated land use planning in ecosystems, and integrated land use planning. Other content areas include legislation/policy, along with technical skills in ecosystem restoration/management, project planning/management, and negotiation and conflict resolution skills.

Figure 14. Groups that are key to change and would benefit most from capacity strengthening in ecosystem management and restoration

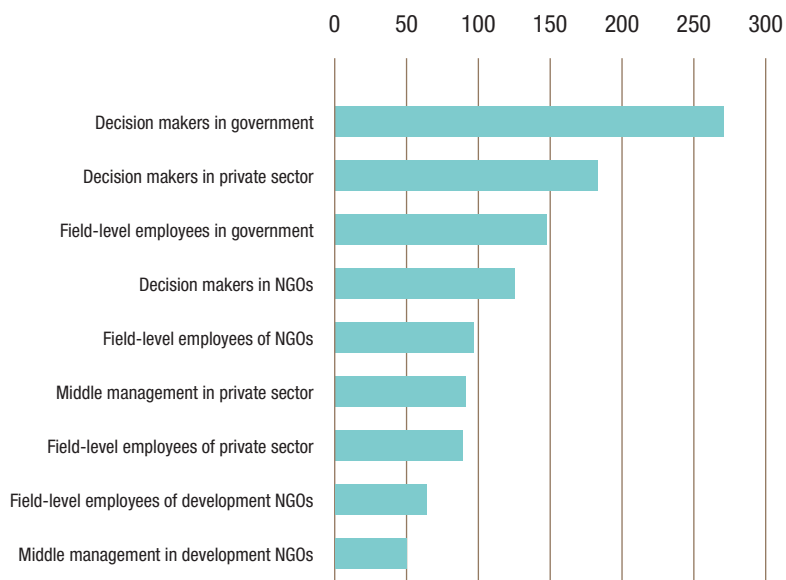
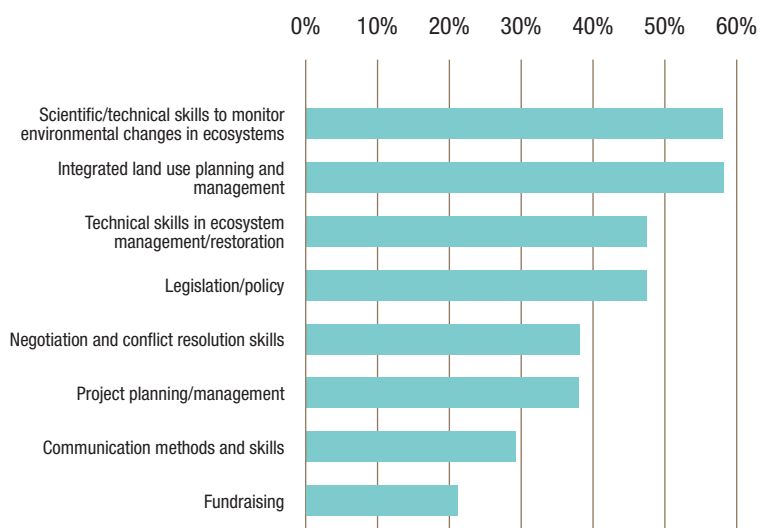


Figure 15. Improvements to technical skills areas needed most to support positive change in ecosystem management and restoration



Respondents also pointed to a variety of other important issues that need to be considered in any successful capacity building strategy:

- Underscore the need to reclaim sustainable island values;
- Use traditional island knowledge resources, and blend these with modern approaches to knowledge management;
- Link people and the environment more comprehensively to create sustainable livelihoods;
- Focus on linking local institutions/ NGOs with government institutions – building these partnerships will be essential to securing lasting capacity development in small islands;

- Improve communication between relevant government departments;
- Ensure freedom of access to environmental information (cf. Aarhus Convention);
- Consult civil society and other stakeholders before (not after) development decisions have been taken.

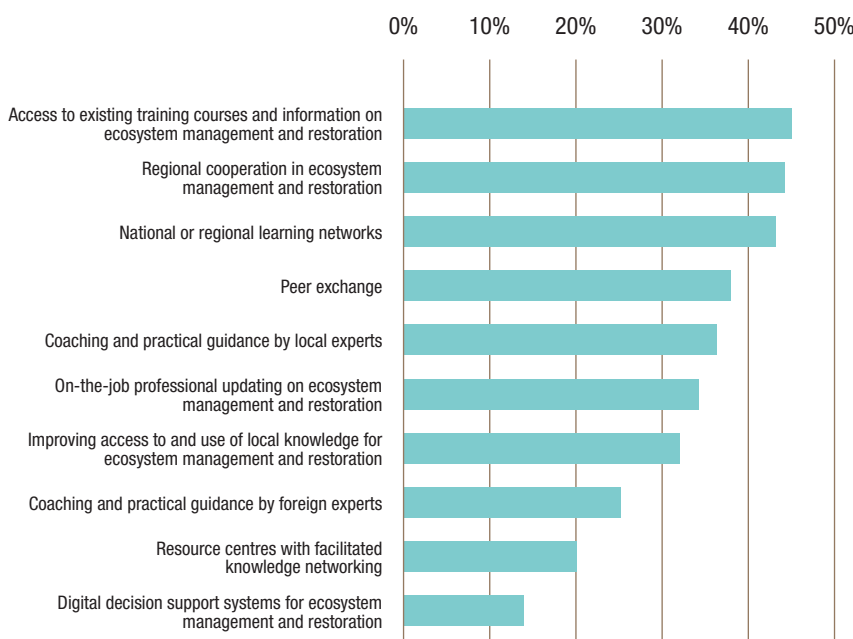
Mechanisms for strengthening capacities

Respondents were asked for their views on the most effective mechanisms for strengthening capacities in ecosystem management and restoration, given the unique parameters of distance and isolation many small islands face (see figure 16).

Capacity building mechanisms most cited were access to existing training courses and information, regional cooperation, and national and regional learning networks. There were a number of respondents who made a particularly strong call for coaching:

“Do not send people abroad, and do not do conferences, seminars or workshops in country. We have those every day from the World Bank, the UN, the IMF, etc. They are useless. We need coaching by foreign experts who stay in country for a long period and work with us at our desks and understand our constraints and help us find solutions. Everything else is a waste of time.”

Figure 16. Most effective capacity strengthening mechanisms



CONCLUSIONS

The world's islands and island peoples are clearly on the front lines of global climate change, whether through sea level rise, shifts in weather patterns, or increases in the frequency and intensity of major storm events. As President James A. Michel of the Seychelles underscored in his address to the Global Islands Partnership at a strategy meeting hosted by the Italian Government which took place in Rome on 25–27 September 2007, islanders are increasingly empowering themselves with tools and strategies to address this challenge.

Yet real empowerment in small island communities, the President stressed, comes through taking concrete action on ensuring investments and development meet the growing challenges presented by climate change, and that knowledge is the key to this empowerment. Island states are increasingly working together in collaborative partnerships to share expertise and knowhow in adaptation strategies. At the same time, islands are also reaching out to major donors and other partners to make certain they

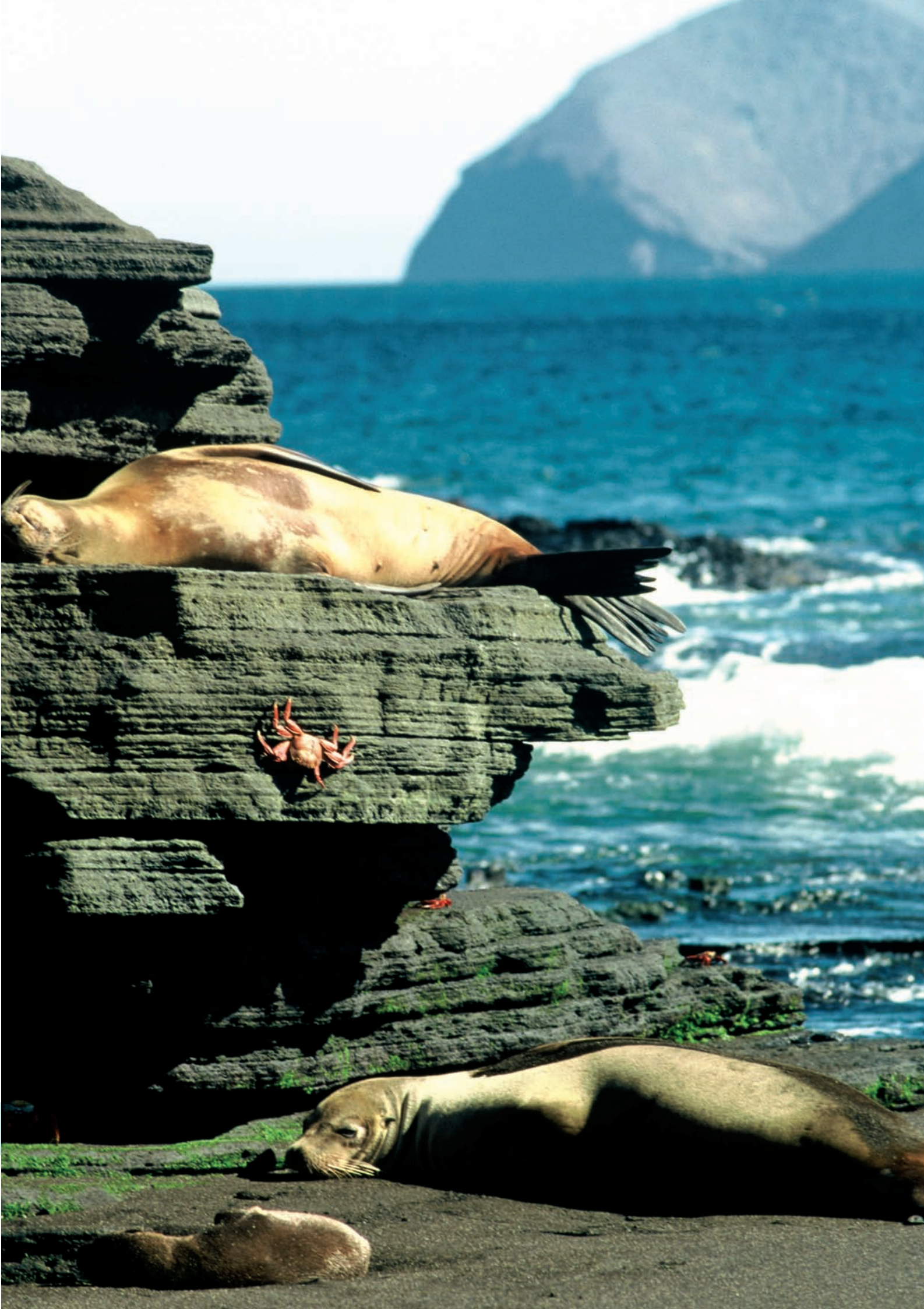
have the best available technical and financial support to ensure ongoing local development adapts, in real and tangible ways, to the long-term realities climate change is likely to present.

In a significant step towards improving research, knowledge and local capacity for adaptation, President Michel touched on his decision to create his nation's first institute of higher learning, the University of the Seychelles. One of the University's leading Faculties will be devoted specifically to driving the agenda for targeted research and innovation on the environmental changes affecting small islands.

There is a strong co-relation between the findings of this study and President Michel's statements. Islanders are acutely aware of the repercussions of climate change, but clearly wish to confront these implications by being squarely in the driver's seat in adapting local development and ecosystem management to meet these challenges. The data would suggest that islanders are not looking for major international policy breakthroughs on climate

change (although this would no doubt be welcomed) but proactive support from the international community to help island nations develop their own expertise and strategies to adapt.

The authors of this report believe that the findings presented here provide guidance on how this support can be targeted, and developed in ways which work hand in hand with the aspirations of island nations. The International Union for Conservation of Nature clearly has a role to play, through its technical programmes and through mobilization of its members and Commissions, to support this agenda – and is taking steps to develop a global programme of work specifically focused on the unique environmental and ecosystem management challenges faced by islands, along with targeted geographic programmes in Oceania and the Caribbean. IUCN looks forward to working closely with the global community of island nations in the development of this programme.



APPENDIX 1

Best practice examples of environmental management initiatives

Respondents were asked to provide examples of exemplary activities or project initiatives focusing on ecosystem management and restoration in small islands, and in particular which demonstrate innovative approaches to building local capacity in these areas. Many examples were given, a small sample of which follows below:

- UNEP-CEP Caribbean Regional Training the Trainers Programme for MPA Managers. Email: avk. uneprcuja@cwjamaica.com
- The Nature Conservancy's MAR program. www.tnccmar.net
- "Improving Governance and Civil Society Participation in Natural Resource Management in the Caribbean". CANARI-Caribbean Natural Resource Institute. Email: info@canari.org
- SEDU-Sustainable Economic Development Unit, Research for SIDS. Email: dpantin@fss.uwi.tt
- Communities and Coastal Programme FSPI (Check www.fspi.org.fj). Email: hugh.govan@fspi.org.fj
- Fiji Locally Managed Marine Area Network-WWF
- Micronesian Leaders in Island Conservation (MIC) – TNC Micronesian Challenge – Governments of Palau, FSM and Marshall Islands. <http://mic-network.blogspot.com/>. Email: solmsted@tnc.org
- Pacific Islands MPA Consortium (PIMPAC), facilitated by US NOAA and Micronesia Conservation Trust, learning network focused on MPA managers in the US-affiliated Pacific Islands providing training, learning exchanges, etc. Contact: Meghan Gombos (Meghan.Gombos@noaa.gov) and Willy Kostka (mctdirector@mail.fm)
- PII – Pacific Invasives Initiative based at Auckland University in New Zealand. Contact: Alan Saunders (a.saunders@auckland.ac.nz)
- Agenda 21 Island of Ischia (Italy). Executing agency: Municipalities of the Island of Ischia. Agenda 21 Ischia is a local comprehensive plan of action in every area in which humans impact on the environment. www.agenda21ischia.it/. Email: info@agenda21ischia.it
- Marine Environment Education Programme (MEEP). Executing agency: Mahonia Na Dari (NGO). The project provides marine education programme to schools targeting young people to be aware of the threats to the marine environment. Contact: mnd@global.net.pg or www.mahonia.org
- PILN – Pacific Invasives Learning Network based at SPREP, Samoa. Contact: Jill Key (JillK@sprep.org)
- Community Legal Education. Executing agency: Centre for Environmental Law and Community Rights (CELCOR), Friends of the Earth PNG. The CLE targets communities in areas experiencing negative effects from logging, mining, oil palm development, fisheries activities. It aims to equip local people or resource owners with legal knowledge and empower them to make informed decisions on their resource development. Contact: haurere@celcor.org.pg or www.celcor.org.pg
- Developing an ecosystem-based management approach for coastal resources of Babeldaob Island, Republic of Palau. Executing agency: Palau Conservation Society. This is a three-year Packard-funded project initiated in June 2006. The overall goals for this project include: (1) fostering healthy coastal communities and ecosystems on Babeldaob, and (2) developing a collaborative process to improve natural resource management for Babeldaob. www.palau-pcs.org

■ Special Project on Adaptation to Climate Change in Coastal Ecosystems in Saint Lucia, St. Vincent and the Grenadines, and Dominica. Executing agency: Caribbean Community Climate Change Centre

■ Mainstreaming Sustainable Land Management. Project executing agency: The Global Mechanism, in collaboration with Caribbean Environmental Health Institute

■ The UNESCO World Heritage Centre has been conducting capacity building and awareness workshops in the Pacific Region within the framework of the Pacific-wide Programme “World Heritage – Pacific 2009”. Further information is available on the following website: <http://whc.unesco.org/en/activities/5>

APPENDIX 2

Timeline of key events regarding international negotiations on SIDS

Year	Event
1989	Malé Declaration adopted during the Small States Conference on Sea Level Rise
1990	The formation of the Alliance of Small Island States (AOSIS)
1992	Agenda 21 adopted during the United Nations Conference on Environment and Development (Rio Earth Summit)
1994	The Global Conference on the Sustainable Development of Small Island Developing States held in Barbados, resulting in the Barbados Declaration and the Programme of Action for the Sustainable Development of Small Island Developing States (Barbados Programme of Action)
1999	A special session to review the implementation of the Barbados Programme of Action was held and the State of Progress and Initiatives for the Future Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States was adopted
2000	Millennium Declaration reiterated the commitment to implement the Barbados Programme of Action
2002	The World Summit on Sustainable Development formalized the Johannesburg Plan of Implementation (JPOI) which includes a chapter entirely devoted to SIDS
2005	An in-depth review of the Barbados Programme of Action was conducted resulting in the adoption of the Mauritius Declaration and the Mauritius Strategy for the Further Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States
2006	The Conference of the Parties to the Convention on Biological Diversity adopted a programme of work on island biodiversity
2006	The Global Islands Partnership (GLISPA) was formalized
2007	During the 24 th session of the United Nations Environment Programme's Governing Council, the vulnerability of small island developing states to the effects of environmental degradation (especially the effects of climate change) was again noted
2007	The United Nations Framework Convention on Climate Change held two expert meetings on adaptation for small island developing states (SIDS)
2007	The SIDS unit of the United Nations Department of Economic and Social Affairs held an experts' group meeting on mainstreaming and monitoring the Mauritius Strategy for Implementation

APPENDIX 3

Projects in SIDS funded by selected donor organizations

Country	WB ²¹	CIDA ²²	ADB ²³	DFID ²⁴	AFD ²⁵
Africa					
Cape Verde	6	13	0	1	2
Comoros	3	6	0	0	1
Guinea-Bissau	8	14	0	2	2
Mauritius	3	5	0	0	0
Sao Tome and Principe	2	6	0	0	0
Seychelles	0	5	0	0	0
Latin America and the Caribbean					
Anguilla	0	0	0	4	0
Antigua and Barbuda	0	0	0	0	0
Aruba	0	0	0	0	0
Bahamas	0	0	0	0	0
Barbados	1	0	0	0	0
Belize	2	0	0	1	0
British Virgin Islands	0	0	0	0	0
Cuba	0	20	0	0	0
Dominica	1	32	0	0	0
Dominican Republic	11	0	0	0	0
Grenada	5	30	0	3	0
Guyana	9	0	0	10	0
Haiti	10	66	0	1	0
Jamaica	6	0	0	11	0
Montserrat	0	0	0	34	0
Netherlands Antilles	0	0	0	0	0
Puerto Rico	0	0	0	0	0
Saint Kitts and Nevis	2	0	0	0	0
Saint Lucia	7	33	0	0	0
Saint Vincent and the Grenadines	2	0	0	0	0
Suriname	0	0	0	0	0
Trinidad and Tobago	2	0	0	0	0
United States Virgin Islands	0	0	0	0	0

Asia and the Pacific					
American Samoa	0	0	62	0	0
Bahrain	0	0	0	0	0
Commonwealth of the Northern Marianas	0	0	0	0	0
Cook Islands	0	0	10	0	0
Fiji	1	0	49	0	0
French Polynesia	0	0	0	0	0
Guam	0	0	0	0	0
Kiribati	1	0	19	1	0
Maldives	5	4	41	0	0
Marshall Islands	0	0	12	0	0
Micronesia (Federated States of)	0	0	10	0	0
Nauru	0	0	1	0	0
New Caledonia	0	0	0	0	0
Niue	0	0	0	0	0
Palau	0	0	1	0	0
Papua New Guinea	6	1	96	2	0
Samoa	5	0	62	0	0
Solomon Islands	3	0	48	0	0
Timor-Leste	9	3	9	4	0
Tonga	2	0	25	0	0
Tuvalu	0	0	6	0	0
Vanuatu	0	4	27	0	0
Total	112	242	478	74	5

APPENDIX 4

Endnotes

1. Vulnerability has been described in a variety of ways but can generally be construed as the ability, or most commonly the inability, of individuals to prepare for and cope with the negative impacts of disasters – whether of human or natural origin (Pelling and Uitto, 2001).
2. Resolution A/RES/44/206 – Possible adverse effects of sea-level rise on islands and coastal areas, particularly low-lying coastal areas.
3. 37 of these are also members of UN, representing 20 per cent of the total UN membership (AOSIS, 2007).
4. Agenda 21 provides comprehensive guidance on sustainable development issues and lists action to be taken at the international, national and local level to mitigate the impacts of human activities on the environment. In section G of chapter 17 of Agenda 21 it is recognized that small islands represented special cases in terms of environment and development and that they were confronted by several development challenges.
5. This was pursuant to UN General Assembly Resolution 47/189.
6. The lack of resources was partially attributed to the decline in official development assistance which had occurred since 1994.
7. Resolution 57/262 – <http://www.unohrrls.org/UserFiles/File/SIDS%20documents/A-res-57-262.pdf>.
8. Decision 24/6.
9. Information obtained from a search of the World Bank's online Project Database (located at <http://web.worldbank.org/WBSITE/EXTERNALPROJECTS/0,,menuPK:115635~pagePK:64020917~piPK:64021009~theSitePK:40941,00.html>) on October 2, 2007.
10. While the strategy focuses on small developing states and not SIDS it is noted that $\frac{3}{4}$ of small developing states are islands.
11. ADB's project database is located at <http://www.adb.org/Projects/>
12. Based on a review of CIDA's online project browser located at <http://les.acdi-cida.gc.ca/project-browser>.
13. Based on a review of the projects listed on Accessible Information on Development Activities (AiDA) located at <http://aida.developmentgateway.org/aida/DoSearchSource.do>
14. Based on a review of the database of the Agence Française de Développement located at <http://www.afd.fr/jahia/Jahia/lang/en/home/NosProjets/derniersprojets?srcpage=Istall&column=projetStatut&order=asc#>
15. Based on a review of the projects listed on the UNEP Project database (located at <http://www.sids.unep.org/database/index.html?id=5&ln=6>) on October 2, 2007.
16. For example, one estimate suggests that the cost of safeguarding Jamaica from a one meter rise in sea level would be as much as 462 million dollars while the cost of protecting Malta and Cyprus from a 20 to 30 centimetre rise could be 550 million and 190 million dollars respectively (Nurse and Moore, 2005, 105). Further, these figures only represent initial infrastructure costs and do not include recurring costs for maintenance.
17. For example, Maumoon Abdul Gayoom, President of the Maldives, during the 1992 United Nations Conference on Environment and Development states that "I stand before you as a representative of an endangered people. We are told that as a result of global warming and sea level rise, my country, the Maldives, may, some time during the next century, disappear from the face of the earth. ...this conference might be the last opportunity ... to initiate global action that would save the Maldives and other low-lying island states from becoming environmental victims of the rising oceans".

18. For example, Palau has established an Office of Environmental Response and Coordination to deal with, amongst other issues, coordinating actions on environmental impacts from development, and implementing comprehensive mitigation programmes for climate change and sea level rise.
19. For instance, we received responses from the Andaman and Nicobar Islands (part of India), the Galapagos Islands (part of Ecuador), numerous responses from overseas territories of France and the UK, US territories in the Caribbean and Pacific, and Zanzibar (part of Tanzania).
20. The recent IPCC volume II report estimates a 20%–50% reduction in available freshwater supplies over the next 50 years.
21. Refers to active and pipeline projects.
22. Refers to operational projects and those in planning.
23. Refers to approved projects.
24. Refers to ongoing and planned projects.
25. Refers to signed projects.

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