

Globethics Repository

The logo for Globethics, featuring the word "Globethics" in white, sans-serif font centered within a solid blue rectangular background.

Greening at the grassroots: people' s participation in sustainable development

This page was generated automatically upon download from the Globethics Repository. More information on Globethics see <https://www.globethics.net>. Data and content policy of Globethics Repository see <https://repository.globethics.net/pages/policy>.

Item Type	Book
Authors	Vivian, Jessica M.
Publisher	UNRISD
Rights	With permission of the license/copyright holder
Download date	2026-07-01 10:24:24
Link to Item	http://hdl.handle.net/20.500.12424/179437



The United Nations Research Institute for Social Development (UNRISD) is an autonomous agency engaging in multi-disciplinary research on the social dimensions of contemporary problems affecting development. Its work is guided by the conviction that, for effective development policies to be formulated, an understanding of the social and political context is crucial. The Institute attempts to provide governments, development agencies, grassroots organizations and scholars with a better understanding of how development policies and processes of economic, social and environmental change affect different social groups. Working through an extensive network of national research centres, UNRISD aims to promote original research and strengthen research capacity in developing countries.

Current research programmes include: Business Responsibility for Sustainable Development; Emerging Mass Tourism in the South; Gender, Poverty and Well-Being; Globalization and Citizenship; Grassroots Initiatives and Knowledge Networks for Land Reform in Developing Countries; New Information and Communication Technologies; Public Sector Reform and Crisis-Ridden States; Technical Co-operation and Women's Lives: Integrating Gender into Development Policy; and Volunteer Action and Local Democracy: A Partnership for a Better Urban Future. Recent research programmes have included: Crisis, Adjustment and Social Change; Culture and Development; Environment, Sustainable Development and Social Change; Ethnic Conflict and Development; Participation and Changes in Property Relations in Communist and Post-Communist Societies; Political Violence and Social Movements; Social Policy, Institutional Reform and Globalization; Socio-Economic and Political Consequences of the International Trade in Illicit Drugs; and the War-torn Societies Project. UNRISD research projects focused on the 1995 World Summit for Social Development included: Economic Restructuring and Social Policy; Ethnic Diversity and Public Policies; Rethinking Social Development in the 1990s; and Social Integration at the Grassroots: The Urban Dimension.

A list of the Institute's free and priced publications can be obtained by contacting the Reference Centre, United Nations Research Institute for Social Development, Palais des Nations, 1211 Geneva 10, Switzerland; Tel (41 22) 917 3020; Fax (41 22) 917 0650; Telex 41.29.62 UNO CH; e-mail: info@unrisd.org; World Wide Web Site: <http://www.unrisd.org>

Copyright © United Nations Research Institute for Social Development. Short extracts from this publication may be reproduced unaltered without authorization on condition that the source is indicated. For rights of reproduction or translation, contact UNRISD.

The designations employed in UNRISD publications, which are in conformity with United Nations practice, and the presentation of material therein do not imply the expression of any opinion whatsoever on the part of UNRISD concerning the legal status of any country, territory, city or area of its authorities, or concerning the delimitation of its frontiers or boundaries.

The responsibility for opinions expressed in signed articles, studies and other contributions rests solely with their authors, and publication does not constitute an endorsement by UNRISD of the opinions expressed in them.

Greening at the Grassroots: People's Participation in Sustainable Development

Discussion Paper No. 22, April 1991
Jessica M. Vivian

Contents

<u>PREFACE</u>	<u>3</u>
<u>ACKNOWLEDGEMENTS</u>	<u>5</u>
<u>INTRODUCTION</u>	<u>6</u>
<u>1. PARTICIPATION AND CONSERVATION PROJECTS: SOME PROMISING APPROACHES</u>	<u>7</u>
<u>2. SUSTAINABLE DEVELOPMENT</u>	<u>8</u>
<u>3. TRADITIONAL RESOURCE MANAGEMENT SYSTEMS</u>	<u>9</u>
<u>4. THE DYNAMICS OF THE COMMONS</u>	<u>11</u>
<u>5. THE SUSTAINABILITY OF TRADITIONAL SYSTEMS IN DEVELOPING SOCIETIES</u>	<u>13</u>
<u>6. TRADITIONAL SYSTEMS AND POPULAR INITIATIVES</u>	<u>15</u>
<u>7. THE SIGNIFICANCE AND POTENTIAL OF LOCALLY BASED ENVIRONMENTAL INITIATIVES</u>	<u>17</u>
<u>8. CONCLUSION: POVERTY, EMPOWERMENT AND SUSTAINABLE DEVELOPMENT</u>	<u>19</u>

Preface

The following paper reports on issues which have been raised in the preliminary stages of the UNRISD research programme on **Sustainable Development through People's Participation in Resource Management**. This programme explores the dynamics of local level initiatives concerned with environmental degradation, examines and analyzes traditionally sustainable resource management practices, and investigates the factors which facilitate or constrain community participation in externally initiated resource management projects and programmes. The author of this paper is co-ordinating the research programme within UNRISD.

The paper focuses on local level environmental problems in the Third World and the means by which steps can be taken to alleviate them, with evidence drawn from the work undertaken within the UNRISD research programme on participation and sustainable development, as well as from other published and unpublished material. It opens with a discussion of the need for an approach to environmental issues based on the full involvement of communities in the definition of problems and the formulation of solutions, incorporating their perceptions of their own needs, concerns and abilities. It is argued that a more thorough understanding of the ways in which people have traditionally managed their resources, and an increased recognition of the ways in which they react to unsustainable resource exploitation, can contribute to the establishment of a more productive approach to sustainable development.

Different types of "traditional" resource management systems are described, and the importance, in different settings, of cultural identification with the environment, of explicit regulations regarding resource use, and of the development and refinement of local environmental knowledge for the success of such customary systems are discussed. The observation is made that social mechanisms which maintain sustainable levels of resource use within a given society are often not readily perceptible to outsiders. The paper also discusses the factors affecting the sustainability of common property régimes. It is noted that mounting evidence against the accuracy of theoretical models which maintain that all common property systems are unsustainable has not prevented such models from influencing - or at least being used to justify - policies which are designed to weaken or eliminate such systems.

The question of the ability of traditional resource management systems to adapt and remain viable in the face of pressures from within and without the system is addressed, and the argument is made that generalizations regarding the future of such systems are inappropriate. The impact of population pressure on traditionally sustainable resource use is taken as a case in point. It is clear that in many situations the conventional conception of a direct relationship between population growth and increased pressure on the environment holds true; such a relationship, however, is not inevitable. Examples are given of cases in which population decline has resulted in environmental degradation, and of other cases in which growing populations have been able to adapt their methods of resource management in a sustainable manner.

The paper next discusses the types of collective action undertaken by communities which see their livelihood threatened because they have been deprived of their traditional means of resource management, or because of unsustainable resource exploitation on the part of outsiders. It maintains that the ecological knowledge of societies which are based on sustainable environmental management practices enables them to better judge the real effects of ecosystem disturbance than outside evaluators. However, the success of local attempts to intervene in the implementation of policies or projects which adversely affect the environment depends upon a range of factors, including the ability of local organizers to form coalitions with regional, national or international groups with similar interests, and the existence of social, economic and political structures which allow the formation of such alliances, and the expression of their concerns.

The paper closes with a brief discussion of the apparent linkages between poverty and environmental degradation in the Third World, arguing that, although in certain cases poverty clearly aggravates processes of degradation, an analysis positing a simple linkage between these two is incomplete without the inclusion of the concept of empowerment.

Further UNRISD research will attempt to provide a broader empirical basis from which to address the issues raised in this paper. Particular emphasis will be placed on the implications of the UNRISD studies for national and international development policy.

April 1991

Dharam Ghai
Director

Acknowledgements

The research programme on which this paper is based was developed after a programme planning workshop held in Geneva in May 1990, and the very useful contributions of the workshop participants are appreciated. The paper itself has benefited greatly from comments by Solon Barraclough, Dharam Ghai and Cynthia Hewitt de Alcántara, although remaining errors and omissions are my own.

Introduction

Much of the action taken by development practitioners to address local level environmental problems in the Third World consists of projects, such as tree planting schemes, soil bunding efforts or improved irrigation management strategies, which seek to establish resource use at sustainable levels for selected target areas. In spite of occasional suggestions that broader-level national or international policies should be formulated with the aim of making natural resource management concerns an integral part of economic and social policy (Warford, 1989), this type of approach remains dominant. It is therefore not surprising that the current discussion of environment and development issues often mentions “people’s participation” as a prerequisite for successful “sustainable development”. Resource management projects, as currently implemented, depend heavily on broad-based co-operation and collaboration because they often rely on the combined actions of individuals which, whether such actions be planting trees or refraining from overfishing, by their nature cannot easily be coerced or enforced. The willingness of people to undertake the required activities – what is commonly understood as their “participation” – is therefore essential for the success of these projects. This paper discusses ways in which a more thorough understanding of the range of activities which constitute true people’s participation in local level environmental activities – from the development of indigenous resource management systems to resistance to destructive external initiatives – can be used to form the basis of a more constructive approach to sustainable development.

The analysis contained in this paper follows from some of the work undertaken within the UNRISD research programme on sustainable development and participation in resource management, which explores, among other things, the dynamics of local level initiatives concerned with environmental degradation, and traditionally sustainable resource management practices. Although definitive findings from this programme are not yet available, the research undertaken to date has indicated a number of areas in which the standard interpretation of the dynamics of the process of localized environmental degradation can usefully be re-examined. This paper explores the issues raised by the research and the insights gained in the process. It opens with a discussion of the prevailing approaches to environmental problems by the development community, suggesting two areas in which a broader understanding of “participation” can contribute toward the formulation of more productive solutions. It then briefly defines “sustainable development” as it is used here, and discusses the utility of this concept. The paper then discusses issues connected with the continued viability of traditional resource management systems, including population pressure, the effect of changing economic structures, common property and human rights issues.

The next section discusses popular initiatives which have affected local level environmental issues, both in the form of organized participatory activities and social protest movements, and the potential which such initiatives have for contributing to arresting or reversing environmental degradation. It is argued that these activities, even those which have evolved precisely to oppose outside developmental interventions, have very important implications for the formulation of more effective sustainable development strategies.

Finally, the paper examines the question of the apparent linkages between poverty and environmental degradation in the Third World in the light of the issues raised by the research. It is argued that, although in certain cases poverty clearly aggravates processes of degradation, an analysis positing a simple linkage between these two is incomplete, and unhelpful in policy terms, without the inclusion of the concept of empowerment.

1. Participation and Conservation Projects: Some Promising Approaches

To the extent that current and future environmental problems can be arrested or reversed through the types of rehabilitation projects usually sponsored by outside donors, or by protection measures taken by governments, research on ways to increase local co-operation with environmental projects is useful. However, evidence is mounting that the targeted project approaches to environmental problems, though often well intentioned and very valuable within a limited scope, will not be sufficient to solve the environmental problems facing the South today. The problems are too widespread, and too deeply entrenched, to be entirely solved with the disparate, sometimes haphazard and usually very localized palliative remedies presently offered. For example, despite the organization, in response to Ethiopia's agricultural crisis, of one of the largest soil rehabilitation projects in the world, Ethiopia's highlands continue to erode: the scope and financing of the project, although massive compared with similar efforts elsewhere, are still far below what would be needed to make a real impact on the environmental problems of the country. As a result, the effects of the conservation project are only evident in small parts of the highlands, and in the isolated areas away from the main roads, where the majority of the farmers live, there are few conservation activities at all (Ståhl 1990). Government environmental protection programmes have similarly limited impacts, due to the often discussed problems of underfunding, lack of political support, and lack of institutional and technical capacity. As Sithembiso Nyoni writes, "no nation in the world was developed by projects alone, let alone projects based on borrowed models" (Nyoni 1987: 52).

The fact that environmental degradation in the Third World is commonly perceived as a crisis in the "sustainable development" literature contributes toward the prevalence of corrective projects. A crisis seems to call for immediate and direct measures, and, as Adams argues in a discussion of development policies, often favours "firefighting" approaches rather than discussions of deeper ills, and the treatment of symptoms rather than causes (Adams, 1990). In addition, a project-oriented approach can seem, from the point of view of donors, to be the most practical. Results are visible and measurable, and impact can usually be demonstrated and success stories reported.

Perhaps a third reason for the prevalence of this approach, and a somewhat more troubling one, is that it can reflect, to a greater or lesser degree, a perception that rural dwellers of the Third World need to be "taught" about the importance of environmental conservation. The World Conservation Strategy, for instance, lists "the lack of awareness of the benefits of conservation and of its relevance to everyday concerns" (IUCN/UNEP/WWF, 1980) as one of the problems to be overcome before sustainable development can be attained. The document calls for addressing this problem by public education on environmental issues, and more community involvement in conservation projects. In fact, of course, many rural Third World communities have practiced environmental conservation for centuries, and it has much more often been industrialized populations which have had to relearn the value of the environment.

Projects, of course, necessarily form the basis of much development work, no matter how "development" is defined. However, the project approach to sustainable development, as now standardly conceived, must both be improved and supplemented by a greater understanding of the grassroots level concerns and activities related to the environment if the environmental problems of the South are to be overcome. At least two directions show promise, and have attracted growing attention, although they have not as yet been the subject of much sustained empirical research. These alternative approaches are both based on "people's participation" – but on "participation" defined in a much more fundamental sense than that commonly used in the environmental literature. True popular participation goes much beyond the mere provision of labour and other inputs into projects initiated from outside the community; it involves decisions being taken and plans being formulated on the local level. In the context of development, as Barraclough (1990) points out, increased popular participation is necessarily

a confrontational process, as the development goals of the élite normally preclude increased involvement of the poor in resource management decisions. The working definition resulting from the UNRISD research programme on popular participation in development highlights both the process and the conflict inherent in participation, which is referred to as “the organized efforts to increase control over resources and regulative institutions in given social situations, on the part of groups and movements of those hitherto excluded from such control” (Pearse and Stiefel, 1979: 8).

The first of the two approaches to sustainable development which will be discussed in this paper involves the increased recognition of traditional resource management practices, an analysis of the value of such practices under current and future conditions, and an assessment of ways either to ensure that sustainable practices are maintained, or to adapt the most viable of them for use in different economic, social or environmental contexts. The second approach involves incorporating the concerns, goals and activities of local grassroots organizations and social movements into externally assisted projects, in such a way that such projects become self-sustaining and, more importantly, self-replicating without additional external promotional efforts. A more thorough understanding of the ways in which people participate in resource management is necessary for the successful development of either of these approaches.

2. Sustainable Development

Defining and refining the concept of sustainable development has become a common exercise. Such an exercise, however, remains a necessary preface to an analysis which utilizes this term, because of the plethora of meanings and emphases, and therefore the diverse implications of this commonly stated objective. Sustainable development is most often defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987: par. 2.1). This definition leaves a good deal of room to manoeuvre: it does not specify whose model of development should be followed, nor who will determine the economic, social or biological needs of the present or of future generations.

In general terms, “sustainable development” is used here to imply a continued improvement in living levels, particularly those of the poor and of disadvantaged groups. In many situations in the Third World, improved living levels are dependent to a large extent upon increased consumption of resources. Therefore, this definition of sustainable development necessarily implies that present levels and methods of resource exploitation should not degrade the environment to the point that resource availability in the future will decline, unless this decrease in resource yields can be compensated through resource “imports”. It is also important to recognize, however, that living levels also depend on environmental factors unrelated to economic or physical resource yields, including the availability of clean air and adequate living space, and, in many circumstances, people’s ability to maintain a spiritual, cultural or aesthetic relationship with their environment. This definition, therefore, also suggests that ecosystem conservation plays a part in sustainable development. Thus the two extremes of the current usage are avoided: it is specifically not intended that “sustainable development” should imply that only those natural resources which can be shown to provide a positive yield in a benefit/cost calculation should be protected. Neither is it implied that the resources of the South should, in the name of the good of the planet, fall under the moral jurisdiction of the North.¹

¹ This is implicitly understood in some uses of the term sustainable development: at times the North seems to see itself as entitled to take measures to enforce environmental preservation without regard to the needs of the South – as, for instance, Northern writers commonly lament “our vanishing rainforests”.

Despite the range of meanings attributed to “sustainable development”, it is important not to dismiss the concept as a fashionable yet vacuous fad. The very fact of the wide appeal of the concept means that it has had important implications for the direction that development efforts have taken, and for the programme of work on the environment currently gathering momentum in the development community, as well as on national and local levels. The current coincidence of interest in sustainable development emerges from developmentalists’ increasing recognition of the importance of preserving natural resources if development is to continue; and conservationists’ growing acceptance that, without development, preservation is not possible.² In addition, those concerned with local empowerment, indigenous people’s rights, or other human rights issues have recognized that, because the environment is often a very local issue, sustainable development has useful connotations for them as well.

However, given that there are deeply entrenched differences in the understanding of sustainable development, the current unity of purpose in working toward this ill-defined goal is likely to dissolve as more concrete (as opposed to conceptual) decisions need to be taken, and trade-offs made. The alliance based on the flexible concept of sustainable development is not inherently stable or, indeed, mutually beneficial to its members, and will inevitably be strained as divergent interests become more clear (Hawkins and Buttel, 1990). However, because of the usefulness of the coalition itself in fostering dialogue and co-operation between the different groups, the concept of sustainable development serves a purpose, and should not be rejected either on the basis that it has been co-opted by mainstream economists or ecologists (Thrupp, 1989; Rees, 1990) or that it is too amorphous to be useful.

In defining sustainable development as continued improvement in the levels of living of the disadvantaged, and focusing on ways in which true local level participation (which includes the involvement of local people in defining the goals to be attained) can form the basis of more successful approaches to reach this goal, a range of important issues are raised. These include the roles of the state and the international development community in determining policy which affects the environment, the mechanisms by such policies are influenced, the impact of large-scale environmental destruction on the options available to small-scale resource managers, and the role played by systemic and structural factors in influencing the outcome of a range of environmental problems. These issues inform the argument of much of this paper, although their detailed and systematic analysis are beyond its scope. This approach produces fresh insights into a number of the standard interpretations of the sustainable development conventional wisdom, including the viability of traditional resource management systems, the dynamics of common property management, the relationship of population growth to environmental degradation, and the large-scale potential of small-scale popular environmental movements.

3. Traditional Resource Management Systems

People who rely very immediately on natural resources for their livelihood have always developed methods to ensure the conservation of their environment. In general, these methods are more explicit and more formalized in situations where resources are very scarce, such as in arid lands, although implicit rules governing resource use exist as well in situations of relative abundance. On the community level, resource management systems have generally been more evident among the disadvantaged and rural dwellers than among the urban rich, simply because means of livelihood other than direct resource exploitation are less readily available to the former groups. Such traditional resource management systems, in spite of the external and internal pressures which will be discussed below, have remained not only viable, but also active and evolving in many parts of the world. Where still extant today, these

² Although there remains as well a strong anti-growth trend of thought among more fundamentalist ecologists.

systems involve elaborate social, technological, and economic mechanisms to safeguard resources.

There are numerous descriptions, for instance, of religious or spiritual significance being attached to certain plants or animals, which are thereby protected. A particularly striking and well-documented example comes from India, where the religious beliefs held by the Bishnoi community have prohibited killing animals or cutting green trees since the fifteenth century. Today, Bishnoi land is a green and flourishing area in the midst of the surrounding Rajasthan desert (Sankhala and Jackson, 1985). There are many similar examples of centuries-old environmental reserves, specifically declared as such (Draz, 1985; Farvar, 1987). More common, however, are customs prohibiting the exploitation of particularly useful species, such as the peepal tree in Asia or the baobab in Africa, or allowing the harvesting of animals or plants only at certain seasons or otherwise under conditions which minimize damage to their reproductive potential (Gadgil, 1985; Tobayiwa, 1985).

Social controls have also been developed in many communities explicitly to regulate resource use and to ensure that the environment is managed sustainably. The intricate mechanisms governing pastoralists' grazing patterns, and the intimate environmental knowledge upon which such mechanisms are based, have been well-documented (Lane, 1990). Herds are moved according to land use rules which prevent either the most productive or the most drought resistant lands from being overgrazed. Social convention similarly governs the use of water in the communal irrigation management systems which have existed for centuries in several parts of Asia (Farvar, 1987; Yabes, 1991), while means of restricting use rights over marine, agricultural and forest resources have enabled communities in various parts of the world to sustain their resource base (Polunin, 1985; Baines, 1989; Moorehead, 1989; Diegues, 1990).

In addition to communities which have well-defined and explicit rules governing resource use, there are many situations in which resource use regulations only become evident to outside observers when overexploitation threatens to degrade the resource base. For instance, in many Pacific island communities, marine resources are seemingly harvested under open-access conditions: there are few stated general rules limiting access, and if local residents are questioned about any such regulation they may say that all are free to fish as they like. However, as Hviding (1990) points out in a study of a Solomon Islands community, when resource extraction exceeds certain limits – commonly associated with the commercialization of fishing – marine tenure traditions begin to exert their force, and social sanctions limit the overexploitation by local residents of any particular area or species.³ Similarly, the complex tenure and usufruct patterns of rainforest extractivists and shifting cultivators have recently been described (Colchester, 1989). The existence of these invisible (to outsiders) or latent traditional management systems means that caution must be taken before judging any particular resource to be unregulated.

A third institutional mechanism increasing the sustainability of traditional resource use is the development, refinement and transmission of environmental knowledge in rural communities. Although often dismissed as “intuitive”, indigenous knowledge has in fact been distilled over centuries and is often the best guide to sustainable resource management. Perhaps the most striking and well-known example of a community which has an incredibly detailed knowledge of the plants, animals and soils of its environment, as well as of the best means of managing its resources in order to compensate for soil deficiencies, is the Kayapo of the Amazonian basin (Hecht, 1989; Cummings, 1990; Hecht and Cockburn, 1990). Although the

³ More active sanctions have been used to combat commercial intrusions from outsiders, ranging from sabotage and assault to the imprisonment of a U.S. fishing boat captain and the impoundment of his vessel.

complexity of the ecosystem of the Amazon makes the Kayapo case particularly impressive, in fact, detailed indigenous environmental knowledge is the rule rather than the exception in most traditional Third World societies (Johannes, 1981; Ravnborg, 1990; Amanor, 1990).

4. The Dynamics of the Commons

Common property tenure and usufruct systems are central to many traditional management systems. Rural Third World communities often do not have as pervasive a sense of individual private property ownership as has developed in the industrialized world – instead, systems of group ownership prevail. It has, until fairly recently, been part of the conventional wisdom to believe that common property systems were inherently less productive, and more susceptible to degradation, than private property régimes. This belief was due to the metaphor of the “tragedy of the commons” (generally attributed to Hardin, 1968), which maintained that, because no individual would have to pay the full costs of overexploitation, it would be in each individual’s interest to extract as much as possible from the resource base, with the result that commonly held resources would inevitably be degraded. This view has largely lost theoretical support in recent years as the distinction between common property régimes (which consist in essence of jointly held property) and open access systems (which have no restrictions on resource use, and which are in fact subject to degradation) has become clear, and as more empirical studies have come out demonstrating the economic value of the commons (Bromley and Cernea, 1989).

Jodha’s (1990) study has been particularly valuable in this latter regard. Research undertaken in 82 villages in India revealed that the poor obtain approximately one-fifth of their household income directly from common property resources, which in addition provide them with more than one-third of their farm inputs. Without the availability of common grazing lands in these communities, over half of the lands currently under food and cash crops would have to be diverted to fodder crops, or else livestock would have to be significantly cut, with a consequent drop in draft power and manure. In addition, Jodha argued, state interventions which have been undertaken to privatize common property, even when such interventions have been developed with the specific aim of helping the poor, have resulted in overall declines in the conditions of poor households.

However, in spite of the fact that the “tragedy of the commons” scenario is no longer accepted by many development theorists, the metaphor remains a powerful influence on – or at least a strong basis for the rationalization of – the policies of both national governments and international development agencies which advocate settling pastoralists (Lane, 1990; Adams, 1990), privatizing fishing grounds (Baines, 1989; Polunin, 1985), and supplanting traditional agricultural systems (Moorehead, 1989; Diegues, 1990). As Baines argues, “there is a consistent tendency by agents of resource development to characterize traditional forms of resource administration as ‘problems’ impeding development” (Baines, 1989: 278). Thus as late as 1989, an official of the Tanzanian Ministry of Agriculture wrote, in terms directly recalling Hardin:

...[the] practice of grazing private livestock on communal land constitutes the single major constraint to improved management of the natural pasture lands. The inevitable result of this system of livestock production is that the cattle owners keep excessive numbers of livestock which in turn leads to overgrazing, soil degradation, low fertility and high mortality rates. However, in order to allow for the best possible care of the agricultural land in the future, users will be allocated land on the basis of lease-hold, thus ensuring that they get full legal protection.... restriction of animal numbers to any reasonable balance with the forage resource has proved difficult due to lack of land ownership rights and communal land ownership (quoted in Lane, 1990: 16).

In fact, however, as Adams (1990) argues, the symptoms of environmental degradation in arid lands – including the concentration of pastoralists – are often mistaken for the cause. That is, when pastoralists are restricted to the utilization of only part of the lands they have traditionally grazed, they are prevented from managing the remaining land in a sustainable manner.

A key factor underlying the continued persuasive power of the tragedy of the commons metaphor is the belief that private land ownership gives individuals increased incentives for managing their resources sustainably. The argument is made that only people who have secure tenure over their landholdings will have the motivation to invest in the long-term undertakings necessary to ensure the continued yields of fragile environments. Indeed, several studies have shown the deleterious effects that lack of secure land tenure has had on local participation rates in environmental rehabilitation projects (Ståhl, 1990). In most of these cases, however, lack of secure tenure is due not to the absence of private ownership as such, but rather to the fact that existing social structures allow those who control usufruct rights – whether they be individuals, groups, corporations or governments – to grant or withdraw these rights at will.

Common property management systems thus mistakenly get tarred with the same brush as some nationalized agricultural schemes, which, though in theory have the potential to be quite productive, in practice often suffer from unwieldy bureaucracies, insufficient resources, and the necessity of conforming to the demands of the international financial community. The actual or potential policy changes caused by these constraints create insecurity among the affected peasant farmers or pastoralists. Moreover, as Bromley and Cernea (1989) point out, the appearance that private property is more stable and adaptive than common property is due to the fact that the rights of exclusion for private property owners are generally upheld by the state: that is, the customary ability of private owners to exclude others from utilizing their land has been formalized and codified in law. On the other hand, the equally essential common property rights of exclusion, which have a firm basis and long history in common law, have been substantially eroded through the active or benign neglect of the state, and common property tenants are thus deprived of the legal protection afforded private owners.

In addition, it is clear that private ownership, secure land tenure, and sustainable resource use are not inevitably or intrinsically linked. For instance, small land owners who are obliged to go deeply in debt each season risk losing their land after a bad harvest; large land owners often show no qualms about clearing rainforests for short-term gains, even when it is clear that the resulting pasture lands will become barren in only a few years. Bandyopadhyay (1990) demonstrated that in certain communities in India, common property resources are better safeguarded than private property resources. The short time preferences of the private owners and their ability to abandon degraded lands once maximum resources had been extracted, mean that they do not have the same incentives for environmental preservation that exist in communities whose families have inhabited a region for generations, and whose descendants will continue to inhabit it for generations to come. Kurien found the same phenomenon in a study of common fishing grounds:

“For the fishermen, their future lies in the sea and its common resources. For capitalists, given their short-term perspective and under the given conditions of investment, the ratio of profits from indiscriminate harvesting of the commons to the profits from regulated and sustainable harvesting are large. For them it actually pays to bring ruin to the commons!” (Kurien, 1991: 35)

5. The Sustainability of Traditional Systems in Developing Societies

As was discussed above, the term “sustainable development” is used here to imply maintained improvements in living levels, of which increased consumption is only one aspect. The question of traditional resource management, therefore, should not be examined only in terms of its efficiency in market economics: in many cases, traditional ways of interacting with the environment provide a fundamental basis to a community’s well-being, and the abolition or support of traditional lifestyles thus becomes a human rights issue. When cultural and social identity is inextricably bound up in traditional forms of resource use, and when such communities desire to maintain this identity,⁴ resource management policy decisions should not be made solely on the basis of which system will provide a maximum economic yield. Thus the plight of extractivist forest dwellers in the Amazon should not be dismissed because the marketing of their products must be subsidized, and the disappearance of the pastoralist way of life should not be considered an indispensable sacrifice to progress.

It is also important, however, not to idealize all indigenous practices or communal societies. Many traditional societies are clearly repressive, while even seemingly highly participatory traditional resource management systems can be inequalitarian, and common property can in reality exclude large numbers of people from enjoying the full benefits of its holdings. The exclusion of women from the decision-making and/or the benefits of such systems is perhaps the most readily observable example of inequality, although similar exclusions based on class, caste, and race are also very common (Watson, 1989).

To many in the development community, however, the question of the relative merits of different traditional systems is seen as moot: the common perception is that the sustainability of traditional ways of life is being threatened not only by exogenous pressures and policy decisions, but also by stresses coming from within the community, including increased integration into the market economy, increased contact with Western cultures, and population pressures. All of these factors do inevitably bring changes to lifestyles, but no tradition has ever been static, and change can occur without tradition being lost. The way in which current trends affect the sustainability of resource use in traditional societies, and thus the viability of such societies, remains a more open question, however. There are many examples of communities which lose their incentives to preserve the resources on which they no longer depend as capitalist development takes place, and they thus abandon their traditional management practices and eventually lose their knowledge of them. This process is not inevitable, however. Rainforest Indians establish market relations with North American ice-cream chains without abandoning their relationship with the forest; African pastoralists initiate political and economic contact with towns without losing their sense of reliance on the land; and many communities throughout the Third World have even opted to market their own “indigenoussness” to tourists, while never giving up their own sense of the value of their way of life.

The relationship between population growth and resource degradation deserves special consideration because of the substantial attention it has received in recent years. The approach to this question has changed little since Malthus, and it is presently widely accepted that population growth will force resource extraction to exceed the capacity of the environment to renew itself, and environmental degradation will be the unavoidable result. Even among those who recognize that population pressure is not the only or ultimate cause of environmental problems (Shaw, 1990), it is common to argue that reducing population growth is nevertheless the most effective means of arresting environmental decline.

⁴ These of course are immensely complex issues, which, not being central to the argument of this paper, will not be further discussed here.

In fact, however, evidence is mounting that the population growth approach is an oversimplistic means of portraying the environmental problems of the Third World. It is true, on the one hand, that in an ultimate sense the resources of the Earth will be limited, and more specifically, that population pressures can contribute directly to overexploitation of resources in situations where people do not have available to them options which would allow them to adapt their behaviour in a sustainable way.⁵ However, concentrating on slowing demographic growth rates in order to relieve particular environmental problems in the Third World is at best ineffective and at worst misguided, diverting attention from more fundamental causes and more productive solutions. As Somanathan (1991) demonstrates in a study of forest management in the Himalaya, deforestation in the region has historically been associated with government policy rather than changes in population size. When traditional forest management systems were disturbed in the 1920s, deforestation occurred in widening circles around villages in the span of a few years – clearly too short a time for a population explosion. The same study reveals that dense population does not necessarily imply deforestation: the crowded valley below the Chandag Reserve, which has retained its forestry control system, maintains well-protected panchayat forests, while the reserve itself, under government control, has been degraded. Similarly, deforestation in Brazil has been clearly demonstrated to have been influenced by a complex set of factors including policy decisions (Mahar, 1989; Hecht and Cockburn, 1990), although this does not prevent the continuing deforestation being ascribed to population pressure.

In addition, there is some evidence to show that the practice of overexploiting resources can be, under some circumstances, connected with an actual decline in population. A study undertaken in the Jebel Marra highlands of Sudan, for instance, describes a situation in which carefully managed agroforestry systems have been a part of the traditional environmental management practices of the region, and have helped to support a densely settled population for centuries (Miehe, 1989). In recent years, however, the population has declined substantially (due in large part to the pull of newly accessible cities), and the resource management of the area has become less rigorous, with the result that tree cover has actually declined. The only mature tree plantations were planted over 60 years ago, and the knowledge that provided the basis for sound plantation management has now largely been lost.

The need to refrain from overgeneralizing about the effects of population dynamics on traditionally sustainable resource management systems is well demonstrated by two studies of the traditional *milpa* agriculture of Mexico, a complex and highly developed form of resource management involving forest extraction, active fallow management and cultivation of maize and other crops. Barrera Bassols, Ortíz Espejel and Medellín (1991) report on an indigenous community in northern Veracruz, detailing the traditional agricultural practices which have remained productive for generations in the context of a strong tradition of community identity, shared labour, and a conscious effort to ensure the integrity of the environment. Recently, however, population growth seems to have reached the point at which the traditional low-input, shifting cultivation techniques will no longer be feasible: in 1989 chemical fertilizers were used for the first time. García-Barrios and García-Barrios (1991) report on changes taking place within the *milpa* of a community in the Mixteca Alta of Oaxaca. In this case, dramatic declines in population due to outmigration have resulted in a situation similar to the Jebel Marra case: the residents are beginning to lose the ecological

⁵ The importance that the power of adaptation has for the outcome of population growth is demonstrated by the fact that, as the Brundtland report points out, “a child born in a country where levels of material and energy use are high places a greater burden on the Earth’s resources than a child born in a poorer country” (WCED, 1987: par. 4.48). The emphasis of population programmes remains on the South, however, while many Northern countries are undertaking concerted efforts to increase their own birth-rates.

knowledge which formed the basis of the *milpa* system, and new techniques are not being developed to replace it.

Although the outcome of these two Mexican cases is in some ways similar, in that the traditional *milpa* agriculture has come under pressure from endogenous forces, the indications are that the eventual outcome will be quite different for the two communities. In the Oaxaca case, agricultural production is declining faster than are the needs of the community, which are being reduced through outmigration, while in the Veracruz case, the growing community has maintained not only food self-sufficiency, but also substantial agricultural surpluses. The eventual outcome of the changes taking place in the Veracruz community remains to be seen, but it is quite possible that a new form of “traditional” resource management will be developed which will continue to enable this community to fulfil its needs. From these two examples, it is clear that population growth (and indeed population decline) is only linked to unsustainable resource use to the extent that the population in question does not have the means to adapt its resource management practices to the changing needs of the community.

In summary, the evidence shows that making generalized judgements about the future of traditional resource management systems in the context of development is inappropriate. It cannot be said that it is either possible or desirable to maintain all such systems, and at the same time it is a mistake to dismiss them as obsolete or unable to remain adaptable in the face of endogenous pressures. What is clear, however, is that the presence of traditionally sustainable environmental practices can provide opportunities for achieving sustainable development which should not be overlooked. In some cases existing systems can arguably be maintained, at least for the medium-term future, in the absence of interference (Polunin, 1985; Lane, 1990; Cummings, 1990). In other cases, traditional resource management techniques show potential for use in informing successful new resource management initiatives (Draz, 1985; Bromley and Cernea, 1989; Yabes, 1991).⁶ A third possibility is that traditions of community management of resources will form the basis of community action which specifically addresses environmental issues. Diegues (1990) argues that the presence of traditional communities can be considered insurance that the environment will be conserved, provided that their management schemes remain viable, because such communities will not allow environmental degradation if it is in their power to arrest it. It is this potential of traditional systems to provide the foundation of popular initiatives that is the subject of the following section.

6. Traditional Systems and Popular Initiatives

In the face of the internationalization of even very local economies, increasing commercialization, and direct pressure and hostility from development agents, it cannot be assumed that traditional resource management systems can continue as before without the active support and struggle of their participants. Such struggles, based on the efforts of local people to maintain or improve their levels of living by halting resource degradation which threatens their traditional livelihoods without providing new benefits to them, are occurring in many parts of the Third World. Perhaps the best-known are the Chipko movement – which originated with localized efforts to prevent the destruction of Indian forests by loggers, and has developed into a regional movement with wide-ranging environmental concerns – and the rubber tappers’ association – which was organized to protect the Brazilian forest dwellers’ rights to extract forest products in a sustainable way, and has resulted in the establishment of extractivist reserves, which are protected from logging (Bandyopadhyay and Shiva, 1988; Schwartzman, 1989). These two movements have become subjects of much discussion, but their frequent citation should not obscure the fact that such struggles are in fact quite widespread.

⁶ These two possibilities will be taken up further in future UNRISD work.

Reaction against infrastructure projects, such as dams or roads, which threaten a transformation or an outright destruction of the environment is perhaps the most common form of what may be termed environmental resistance movements. Again, it is the large projects – the Narmada dam in India or the Balbina in Brazil – which have attracted the most attention, but these are far from being the only examples of such activities. The Jonglei canal project in southern Sudan, which has been planned since the 1940s as a way to by-pass the swamps of the region, is as yet incomplete in part because local resistance (influenced by the civil war) resulted in serious environmental flaws in the design being recognized. In Nigeria, resistance to the Bakolori reservoir project in the late 1980s was violently repressed (Adams, 1990), but the movement ultimately had repercussions elsewhere in western Africa, as later dam projects made more deliberate efforts to address the concerns of local communities.

Environmental activism does not only occur when complete environmental destruction is threatened, but can also result from attempts to convert resources from one form to another in a way which renders traditional ways of life untenable, without providing alternative economic opportunities to the communities affected. Lane's (1990) work with the Barabaig pastoralists in Tanzania gives one example of the form which such activism can take. The conversion of part of their traditional grazing lands to wheat farms forced the Barabaig to concentrate their herds on the inferior lands remaining to them. As a consequence, both this land and the area converted to wheat monocropping have suffered soil erosion. Economic hardship for the Barabaig has been the result, while the wheat farms have failed to yield the benefits – to the farmers or to the country – which were predicted. The Barabaig have reacted by challenging in court the process which resulted in the appropriation of the land, and asserting their claim that their customary use of the land should grant them to legal title to it. The case has not yet been decided, but it has attracted worldwide attention, not least from the Canadian funders of the wheat farm project. Even if the Barabaig lose their case, their activity will have resulted in closer examination by at least some donors of schemes which transform rangelands to farms.

Similarly, the conversion of Brazilian wetlands, traditionally managed by fishing and farming communities, to irrigated sugar cane and rice plantations has resulted in collective action. In his study of *varzea* (floodplain) fishing communities in Brazil, Diegues (1990) found that without this social mobilization, neither the livelihood of traditional communities nor the environment can be conserved, because the plantations not only displace the traditional inhabitants of the area, but also cause significant environmental degradation, disturbing the finely tuned ecosystem which maintains marine life. As in the Tanzanian case, the conversion to farming of parts of former communal land affects surrounding areas as well. Not only have certain species of fish and trees disappeared altogether, but the remaining fishing areas must be exploited more intensively than before. Protests against the plantation schemes began in 1986, and enlisted the assistance of national and international support groups. The ecological and cultural importance of the *varzea* was documented in a series of technical surveys, and by 1988 the area was declared under environmental protection.

Environmental activism in the Third World involves not only struggle against the expropriation of resources, but also resistance to resource overexploitation by outsiders. The communities of the rainforests of Sarawak, in Malaysia, whose economy and way of life are based on the forest, have protested against government-supported logging activities whose benefits are channelled to élites outside of the region. In 1987 the Penan, a hunting and gathering society, appealed to the Government to stop the logging:

“Stop destroying the forest or we will be forced to protect it. We have lived here before any of you outsiders came. We fished in clean rivers and hunted in the jungle.... Our life was not easy, but we lived it in content. Now, the logging companies turn rivers into muddy streams and the jungle into devastation. The fish

cannot survive in dirty rivers and wild animals will not live in devastated forest...
We want our ancestral land, the land we live off, back. We can use it in a wiser
way". (cited in Colchester, 1989: 42)

The logging did not stop, and the Penan people acted, blockading logging roads. The action was soon taken up by other communities of the rainforest, and logging activity was brought to a standstill. In addition, the activists were able to link into environmental networks to publicize their cause, and to launch an international campaign to influence other countries to stop importing Malaysian timber. Although some concessions have been won, the campaign has not been an unqualified success: "crusading" western environmentalists were accused of exploiting the Penan and hindering development, while at the same time Penan leaders were jailed under an anti-terrorist law (Lim, 1989; **Utusan Konsumer**, 1989).

The Malaysian experience has been repeated in many areas of the world where forest communities have been threatened by logging, including India, Thailand, the Philippines and Brazil. Activism in response to overexploitation of common resources by outsiders is not limited to indigenous forest communities, however. Kurien's (1991) study of the responses of the fishworkers of the Kerala coast to overfishing of common waters by commercial fishing companies is a case in point. As it became clear that trawler fishing was depleting fish stocks to an unsustainable degree, a campaign to ban the large boats from the coastal waters during the crucial spawning season was begun. It took almost ten years of organization, agitation, hunger strikes and political manoeuvring, but by 1988 such a ban was enacted.

Again, it cannot be said that success was complete: the struggle had to be continued in order for the fishing ban to be imposed the following year. At the same time, the years of competition with the commercial fleets had caused many of the traditional fishermen to turn to outboard motors and miniature versions of the destructive ring seines used by the large boats in order to increase their own catches; now the traditional fishing community is in danger of abandoning its previous sustainable practices. However, this trend is offset by another one. In the course of activating the collective action against the commercial boats, many of the organizers have gained a more precise understanding of the limits of marine resources, and they are now beginning to act to stop the newly formed destructive habits of their own community.

7. The Significance and Potential of Locally Based Environmental Initiatives

There are several lessons to be learned from a study of environmental activism undertaken by traditional communities. It can be observed that collective action to resist the implementation of environmentally destructive development projects is rarely triggered primarily by an overriding concern to preserve the environment in its existing state, but rather hinges on the lack of sufficient benefits from such projects accruing to local communities. This fact does not imply that traditional communities are insensitive to the aesthetic niceties of their surroundings, but rather indicates that they have a desire to survive, and to improve their living levels and consumption levels if possible.

It has also become clear that, because of their extensive ecological knowledge, societies which are based on sustainable environmental management practices are much better able to accurately assess the true costs and benefits of ecosystem disturbance than any evaluator coming from outside the local area. Such societies are the first to realize that "development" which results in environmental degradation will rarely yield net benefits in the long run, and the emergence of popular opposition to a project can therefore be taken as a reasonably accurate indication that it will have negative environmental consequences.

A third indication of the investigation into the dynamics of environmental activism is that the success of such movements is often due to their ability to form a coalition with regional, national or international groups which have similar interests, and to publicize their grievances and their cause. Such support for local level activity can come from NGOs with development and equity concerns, from social movements focusing on human rights issues, or from international agencies directed toward environmental conservation. In addition, it appears that among the residual benefits of collective action of this sort is the ability of many of the movements to turn from negative to positive activity – they move, that is, from opposing to initiating activities in a process that Hirschman has dubbed “the conservation and mutation of social energy” (Hirschman, 1984). This transformation has taken many forms – from opposition to a large dam resulting in proposals and support for a series of smaller, more manageable dams (Bandyopadhyay, 1990), to the formulation of the entirely new concept of extractivist reserves (Schwartzman, 1989).

It is also clear, however, that environmental activism does not take place in a vacuum. The impact of such movements – and, indeed, the possibility of collective action being undertaken at all – depends to a large extent on the social, economic and political structures which influence community dynamics from the local, national and international levels. Thus the Kerala fishworkers’ movement owes a good part of its relative success to the fact that the fishworkers were working within a social and political system which enabled them to form a voting block large enough to make themselves felt at the state government level, in spite of the superior resources of the opposing fishing lobbies. The Penan, on the other hand, have had a substantially smaller real impact despite their more intensive and desperate struggle: the mechanisms by which the needs of these forest dwellers could come to outweigh the powerful logging interests are much weaker in this case, and in fact the progress which has been made is due in large part to international pressure, rather than to government responsiveness to its weaker constituents.⁷ The importance of structural factors for the success, or even the existence, of collective action means that such action is not undertaken in all circumstances where there is a need and a will to do so. A repressive state can crush or atomize organizational efforts at an early stage, while the domination of the economy by outside interests can close off channels of activity on the local level. Similarly, the existence of intra-community repression can prevent class, race or gender-based alliances from forming, and from making their interests felt.

A fifth indication of this research is that the need for activism around local environmental issues has put sustainable resource management on the agenda of activist groups and NGOs with wider concerns. Thus the Organisation of Rural Associations for Progress (ORAP), a Zimbabwean development NGO, responded to the environmental degradation caused by inappropriate green revolution farming techniques by supporting a return to drought-resistant crops, organic farming methods, and afforestation programmes (Nyoni, 1990). A similar process has taken place within other popular organization (Blauert and Guidi, 1990). For example, the Popular Defense Committee of Durango, Mexico, which was originally organized to obtain housing rights and other basic needs, turned to environmental activism when industrial pollution threatened the water supply of the community. In time, this socially based ecological movement not only widened to include surrounding rural areas in its activities, but also expanded its activities to address problems of sewage disposal, drainage, and refuse management (Moguel and Velázquez, 1991).

⁷ At least one Malaysian activist argues that the solution to this problem is not to change governments, but to break the power of multinational corporation to determine government policy on issues which affect them.

8. Conclusion: Poverty, Empowerment and Sustainable Development

There is at present much discussion of the relationship between poverty and environmental degradation. The common argument is that poor people are forced to cultivate marginal lands, or to overexploit resources in spite of the fact that they threaten their future livelihood by doing so, because they will not otherwise be able to survive the present season. There is of course some truth in this model, but as a basis for understanding the primary causes of environmental degradation it is not particularly helpful. It may just as easily be said (as it has often been) that the excessive wealth and overconsumption of industrialized societies is responsible for the vast majority of unsustainable resource extraction, and that wealth may therefore be more appropriately blamed for ecological problems than poverty. Again, however, while this way of framing the problem may be accurate, it does not provide substantial assistance in finding ways out of the difficulties. And, as the scale of the ecological disasters in some of the former socialist countries attests, neither does the presence of economic inequality fully account for environmental degradation.

The research on participation in resource management described above, however, has shown that poor communities not only have the highest incentives for managing their resources sustainably, but they have historically often been able to develop a variety of effective and adaptable means of doing so. Environmental degradation in rural areas of the Third World is not due to the poverty of rural communities; rather, poverty is a symptom of one of the primary underlying causes of local level environmental decline in the Third World today: the disempowerment of these communities.⁸ Furthermore, to the extent that local level degradation forms a major component of global environmental problems, this growing inability of communities to participate in resource management decisions has an important impact on the potential for sustainable development. Disempowerment in the course of development can take many forms. People may be deprived of access to the resources on which they depend, their traditional tenure rights and rights to exclude outsiders may be abrogated, or their ability to make their own decisions regarding resource management may be curtailed. In all of the cases the result is similar: resource management decisions are taken over by those with insufficient stake in the local environment, and resources are extracted at unreplenishable levels in order to benefit other, often richer, societies.

It is clear, then, that struggles for greater participation are essential elements of the foundation of an enduring basis for sustainable development. This process can only be helped by the growing recognition of the importance of the environment for the future well-being of the entire planet. Muntamba argues that “environmental degradation is becoming a liberating force”:

“I have come across communities/chiefdoms where the ecological degradation which found expression in the food crisis of the 1980s pushed people into taking conservation measures which in fact flouted national laws.... Some governments are willing and anxious to try ways of managing the natural resources to ensure the livelihoods of poor people. Where people know this, they are seizing the opportunity for further empowerment”. (Muntamba, 1990: 4).

Under certain conditions it is clear she is right – in particular when degradation reaches the point where outside interventions are abandoned in favour of local initiatives, or when an

⁸ A full discussion of the concepts of “empowerment” and “disempowerment”, and of the problems with these terms, is beyond the scope of this paper. As used here, “empowerment” refers to a complex process centred around people’s efforts to increase their participation – that is, their control over physical and social resources – within the development process.

ecological disaster resulting from interventions in one area leads to calls for more recognition of the sustainability of traditional practices in similar ecological zones. The question of how widespread a phenomenon this empowerment process can become, however, is still open. It will depend on the efforts of both development agents and environmentalists not only to support people's rights for self-determination, but also to recognize that their struggles are essential for the health of the environment.

Bibliography

- Adams, W.M.
Green Development: Environment and Sustainability in the Third World,
Routledge, London, 1990.
- Amanor, Kojo
“Land Degradation, Fallow Management and Local Environmental Knowledge in the
Krobo District of Ghana”, mimeo, UNRISD, Geneva, 1990.
- Baines, G.B.K.
“Traditional resource management in the Melanesian South Pacific: A development
dilemma”, in Berkes (ed.), op. cit., 1989.
- Bandyopadhyay, Jayanta
From Natural Resource Conflicts to Sustainable Development in the Himalaya,
paper prepared for UNRISD workshop on Sustainable Development through People’s
Participation in Resource Management (9-11 May 1990).
_____ and V. Shiva
“Political economy of ecology movements”, **Economic and Political Weekly**, 11
June 1988, pp. 1223-1232.
- Barraclough, Solon
Popular participation in rural development and forestry, paper presented at the
Regional Workshop on Implementation of Participatory Forestry Projects, Debre Zeit
(19 October 1990).
- Barrera Bassols, Narciso, B. Ortíz Espejel and S. Medellín
“Un reducto de abundancia: El caso excepcional de la milpa en Plan de Hidalgo,
Veracruz”, in Hewitt de Alcántara (ed.), op. cit., forthcoming.
- Berkes, Fikret (ed.)
**Common Property Resources: Ecology and Community-Based Sustainable
Development**, Belhaven Press, London, 1989.
- Blauert, Jutta and Marta Guidi
Strategies for Autochthonous Development: The Local Focus, Oaxaca, Mexico,
mimeo, UNRISD, Geneva, 1990.
- Bromley, Daniel W. and Michael M. Cernea
**The Management of Common Property Resources: Some Conceptual and
Operational Fallacies**, Discussion Paper No. 57, The World Bank, Washington,
D.C., 1989.
- Browder, John (ed.)
Fragile Lands of Latin America: Strategies for Sustainable Development,
Westview Press, Boulder, 1989.
- Colchester, Marcus
**Pirates, Squatters and Poachers: The Political Ecology of Dispossession of the
Native Peoples of Sarawak**, Survival International, London, 1989.
- Cummings, Barbara J.
**Dam the Rivers, Damn the People: Development and Resistance in Amazonian
Brazil**, Earthscan, London, 1990.
- Diegues, Antonio Carlos S.
**Sustainable Development and People’s Participation in Wetland Ecosystems
Conservation in Brazil: Two Comparative Studies**, paper prepared for UNRISD
workshop on Sustainable Development through People’s Participation in Resource
Management (9-11 May 1990).
- Draz, Omar
“The Hema system of range reserves in the Arabian peninsula: Its possibilities in
range improvement and conservation projects in the Near East”, in McNeely and Pitt
(eds.), op. cit., 1985.
- Farvar, M. Taghi

- “Local strategies for sustainable development”, in Jacobs and Munro (eds.), op. cit., 1987.
- Gadgil, Madhar
 “Social restraints on resource utilization: The Indian Experience”, in McNeely and Pitt (eds.); op. cit., 1985.
- García-Barrios, Raúl and Luis García-Barrios
 “Subsistencia maicera y dependencia monetaria en el agro semiproletarizado: Una comunidad rural Mixteca”, in Hewitt de Alcántara (ed.), op. cit., forthcoming.
- Hardin, G.
 “The tragedy of the commons”, **Science**, No. 162, 1968, pp. 1243-1248.
- Hawkins, Ann P. and Frederick H. Buttel
The Political Economy of ‘Sustainable Development’, mimeo, Cornell University, Program on Science, Technology and Society, Ithaca, 1990.
- Hecht, Susanna
 “Indigenous soil management in the Amazon Basin: Some implications for development”, in Browder (ed.), op. cit., 1989.
 _____ and Alexander Cockburn
The Fate of the Forest: Developers, Destroyers and Defenders of the Amazon, Penguin Books, London, 1990.
- Hewitt de Alcántara, Cynthia (ed.)
Reestructuración económica y subsistencia rural: El maíz y la crisis de los 80, UNRISD, forthcoming.
- Hirschman, Albert O.
Getting Ahead Collectively: Grassroots Experiences in Latin America, Pergamon Press, New York, 1984.
- Hviding, Edvard
 “Keeping the sea: Aspects of marine tenure in Morovo Lagoon, Solomon Islands”, in K. Ruddle and R.E. Johannes (eds.), **Traditional Marine Resource Management in the Pacific Basin: An Anthology**, UNESCO/ROSTSEA, Jakarta, 1990.
- IUCN/UNEP/WWF (International Union for Conservation of Nature and Natural Resources/United Nations Environment Programme/World Wildlife Fund)
World Conservation Strategy, Gland, 1980.
- Jacobs, P. and D.A. Munro (eds.)
Conservation with Equity: Strategies for Sustainable Development, ICUN, Gland, 1987.
- Jodha, N.S.
 “Rural common property resources: Contributions and crisis”, **Economic and Political Weekly**, 30 June 1990, pp. A65-A78.
- Johannes, R.E.
Words of the Lagoon: Fishing and Marine Lore in the Palau District of Micronesia, University of California Press, Los Angeles, 1981.
- Kurien, John
Ruining the Commons and Responses of the Commoners: Coastal Overfishing and Fishermen’s Actions in Kerala State, India, Discussion Paper No. 23, UNRISD, Geneva, 1991.
- Lane, Charles
Barabaig Natural Resource Management: Sustainable Land Use Under Threat of Destruction, Discussion Paper No. 12, UNRISD, Geneva, 1990.
- Lim Siong Hoon
 “Malaysia in skirmishes over environment”, **Financial Times**, 27 October 1989.
- Mahar, Dennis J.
Government Policies and Deforestation in Brazil’s Amazon Region, The World Bank, Washington, D.C., 1989.
- McNeely, Jeffrey A. and David Pitt (eds.)

- Culture and Conservation: The Human Dimension in Environmental Planning**, Croom Helm, London, 1985.
- Miehe, S.
 “Acacia Albida and other multipurpose trees on the fur farmlands in the Jebel Marra Highlands, Western Darfur, Sudan”, in Nair (ed.), op. cit., 1989.
- Moguel, Julio and Enrique Velázquez
Organización social y lucha ecológica en una región del norte de México (Social Organization and the Ecological Struggle in a Region of Northern Mexico), Discussion Paper No. 20, UNRISD, Geneva, 1991.
- Moorehead, Richard
 “Changes taking place in common-property resource management in the inland Niger Delta of Mali”, in Berkes (ed.), op. cit., 1989.
- Muntemba, Shimwaayi
People’s Participation in Environmentally Sustainable Development: A Reflection on Some Emerging Issues, paper prepared for UNRISD workshop on Sustainable Development through People’s Participation in Resource Management (9-11 May 1990).
- Nair, P.K.R. (ed.)
Agroforestry Systems in the Tropics, Kluwer Academic Publishers and ICRAF, Dordrecht, 1989.
- Nyoni, Sithembiso
 “Indigenous NGOs: Liberation, self-reliance, and development”, **World Development**, Vol. 15, Supplement (Autumn 1987), pp. 51-56.
-
- Sustainable Development through People’s Participation in Resource Management: The Case of ORAP, Zimbabwe**, paper prepared for UNRISD workshop on Sustainable Development through People’s Participation in Resource Management (9-11 May 1990).
- Pearse, Andrew and Matthias Stiefel
Inquiry Into Participation - A Research Approach, UNRISD, Geneva, 1979.
- Polunin, Nicholas V.C.
 “Traditional marine practices in Indonesia and their bearing on conservation”, in McNeely and Pitt (eds.), op. cit., 1985.
- Ravnborg, Helle Munk
Peasant’s Production Systems and Their Knowledge of Soil Fertility and Its Maintenance: The Case of Iringa District, Tanzania, Working Paper 90.1, Centre for Development Research, Copenhagen, 1990.
- Rees, William E.
 “The ecology of sustainable development”, **The Ecologist**, Vol. 20, No. 1 (January/February 1990), pp. 18-23.
- Sankhala, K.S. and Peter Jackson
 “People, trees and antelopes in the Indian desert”, in McNeely and Pitt (eds.), op. cit., 1985.
- Schramm, Gunter and Jeremy J. Warford (eds.)
Environmental Management and Economic Development, The World Bank, Washington, D.C., 1989.
- Schwartzman, Stephan
 “Extractive reserves: The rubber tappers’ strategy of sustainable use of the Amazon rainforest”, in Browder (ed.), op. cit., 1989.
- Shaw, Paul
 “Rapid population growth and environmental degradation: Ultimate versus proximate factors”, **Environmental Conservation**, Vol. 16, No. 3, 1989, pp. 199-208.
- Somanathan, E.

- “Deforestation, property rights and incentives in central Himalaya”, **Economic and Political Weekly**, Vol. XXVI, No. 4, 26 January 1991, pp. PE 37-PE 46.
- Ståhl, Michael
Constraints to Environmental Rehabilitation through People’s Participation in the Northern Ethiopian Highlands, Discussion Paper No. 13, UNRISD, Geneva, 1990.
- Thrupp, Lori-Ann
Politics of the Sustainable Development Crusade: From Elite Protectionism to Social Justice in Third World Resource Issues, mimeo, Energy and Resources Group, University of California, Berkeley, 1989.
- Tobayiwa, Chris
“Shona people, totems and wildlife”, in McNeely and Pitt (eds.), op. cit., 1985.
- Utusan Konsumer**
“Penan plight moves the world”, November 1989, No. 195, The Consumers’ Association of Penang, Penang.
- Warford, Jeremy
“Environmental management and economic policy in developing countries”, in Schramm and Warford (eds.), op. cit., 1989.
- Watson, Dwight J.
“The evolution of appropriate resource-management systems”, in Berkes (ed.), op. cit., 1989.
- WCED (World Commission on Environment and Development)
Our Common Future, Oxford University Press, London, 1987.
- Yabes, Ruth
The Zanjeras Ilocos Norte Irrigation Project (INIP): Lessons of Environmental Sustainability from Philippine Traditional Resource Management Systems, mimeo, UNRISD, Geneva, 1991.