

## INTRODUCTION: RETHINKING ENVIRONMENT AND DEVELOPMENT IN AFRICA AND ASIA

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### ABSTRACT

This paper introduces a series of African and Asian case studies on environment and development. It explores the tension between optimistic and pessimistic interpretations of environmental maintenance and transformation. It critically examines political ecology and eco-populism before analysing underlying models of governance, social justice and human rights. Key concepts in understanding the relationship between environment and development are discussed, including security, sustainable livelihoods, coping and entitlements. The paper ends with a discussion of marginality and vulnerability with particular attention to urban and informal sector environments. Copyright © 2001 John Wiley & Sons, Ltd.

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### INTRODUCTION

This collection of eight papers examines aspects of the creation, maintenance, degradation and restoration of environments in subSaharan Africa and South Asia. Different components of natural environments and rural and urban environments are included. The papers consider the agendas, actions and consequences of the actions of different agents: states and their bureaucracies; the formal and informal sectors; civil society; local communities and local power groups; non-governmental organizations (NGOs) businesses; households and individuals. Taken together, the papers give a snapshot of the state of play in two areas of the Third World that have, during the last 20 years, been seen as paradigm cases of environmental degradation and environmental crises, though subsequently reassessed as examples of successful environmental management.

Two of the papers relate to urban environments, a relatively neglected area in studies of environmental degradation. Both consider the use and development of land left over from mainstream urban planned development. Such land is usually left out of the planned urban system because it is of low environmental quality and much is hazardous, perhaps because flooding or through instability. Emmel and Soussan review the processes through which impoverished (or marginal) people, unable to access the formal land market, colonize marginal land in Mumbai, stabilize and protect this land and add services for water and sewage. Howorth, Convery and O'Keefe examine the significance and characteristics of urban agriculture, which occupies almost a quarter of the land in Dar es Salaam. The activity is illegal, but valuable, in creating a living for the poor and improving the quality of degraded and hazardous environment. In both Mumbai and Dar es Salaam, the significant support to livelihoods is achieved against opposition from the formal planning and political systems. Like many of the activities of the informal sector, these improvements are major and uncharged benefits to the cities (Bugnicourt, 2000). In Mumbai, these activities are aided by a community, based organization (CBO) in Dar es Salaam the

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environmental improvement is incidental to the income-generating activities of countless individuals. These two urban case studies are representative of the (subversive) activities of at least a billion people in the Third World.

Two papers discuss deltaic rivers and floods in areas of high population and with long histories of development. Soussan, Chadwick, Marin, Mallick and Alam examine the effects of the 1998 flood in Bangladesh and Kirkby reviews attempts to save the flush irrigation system of the Gash River in Sudan from disintegration. In each case, the river and its flood are the lifeblood of the economic system and the basis of a range of livelihoods through the use of water for irrigation, though a wider range can be supported in Bangladesh because the rivers are perennial. Lateral river erosion during floods threatens both areas. In Bangladesh, the main losers from floods are those living on riverbanks whose lands are completely lost: on the Gash Delta, the cost of stabilizing banks against the annual flood is one of the threats to the sustainability of the whole system. Location on a laterally eroding river is thus a main cause of vulnerability in Bangladesh: on the Gash Delta vulnerability is greatest for those living remote from the river on the disintegrating northern section of the irrigation scheme. Coping strategies, particularly those involving social relations, are a central concern of the Bangladesh study. On the Gash, ethnicity continues to dominate livelihood opportunities.

Moyo examines environmental problems in the communal areas of Zimbabwe. Since the 1950s these densely populated zones have been seen as problematic due to the extent of degradation, particularly deforestation and soil erosion. This degradation is the result of artificial Malthusian pressures, though Moyo stresses that population pressure is only one of the many factors leading to degradation. The official response has been to blame inappropriate farming methods (smallholder 'incompetence'), rather than inadequate access to land and water or many other external factors beyond the control of the farmer. Little attention has been paid to livelihood and coping strategies.

The uses of communal resources are considered in the very different environment of the Middle Hills of Nepal by Dougill, Soussan, Kiff, Sprigate-Baginski, Yadav, Dev and Hurford. They examine the extent to which the redevelopment of community forestry has aided sustainability in the farming system. During the 1980s the loss of forest, causing cataclysmic soil erosion and linked to overpopulation was perceived to be one of the earth's most devastating environmental problems. Investigative methodologies involved participative investigation of community views and environmental analysis. The differing perspectives of richer and poorer land users and the difficulties caused by the absence of men, who were working elsewhere, are similar to findings in very different environments, but the finding that livelihood sustainability is not ensured by environmental sustainability is disturbing.

Mahiri and Howorth consider changing interpretations of, and responses to, the fuelwood problem in Kenya, dealing with views on the causes and policy relevance of different approaches. They stress that fuelwood availability is not simply determined by population pressure on resources and degradation of the physical environment, but that in the socio-political environment, restricted entitlement of access to resources creates particular problems for some users. The problem is very place-specific and policy responses must reflect this specificity. Technological solutions such as improved stoves have been of limited value.

Collins's paper on health ecology, land degradation and development broadens the study of land degradation by linking it to epidemic and endemic human diseases, stressing that human diseases change as environments change. In particular he argues for putting human health at the centre of considerations of decisions on land management. A consequence of such a repositioning of human health issues is that the definition of environmental degradation changes to include any alteration of environment (which might according to other criteria be an improvement) leading to increase of disease. The paper considers the policy links of land management/environmental degradation, livelihood security and health and includes three case studies from Mozambique.

#### OPTIMISM OR PESSIMISM?

Opinions on and interpretations of environmental maintenance, creation, transformation and transitions are still hotly contested both generally and in relation to the two regions (Bush, 1997; Schuurman, 2000). On the pessimistic side, Kaspersen *et al.* (1999) find evidence globally of continuing degradation with a slow response by society, threatening continuing impoverishment, a loss of options for human activity and increasing costs. Since the emergence of the modern environmental movement in the 1960s and 1970s, the educated public and many

academics and policy-makers at national and international levels (notably the United Nations Environment Programme) have been persuaded by neo-Malthusian arguments, relating environmental degradation to population pressure (Bush, 1997), that draconian actions are needed and justified in order to protect the environment and specifically to control population growth in the Third World. This view is widely held in relation to both urban and rural environments. Inappropriate land management practices and technologies, added to the effects of population pressure, are widely believed to cause deforestation, soil erosion, desertification, loss of biodiversity and climate change. These effects have been identified, in turn, as critical threats to human welfare, from the mid-19th century in the case of deforestation (Marsh, 1864 1965) to the 1980s in the case of climate change.

These gloomy explanatory models of environmental and human degradation have been questioned in relation to subSaharan Africa and South Asia. Blaikie (1985), Thompson *et al.* (1985), Blaikie and Brookfield (1987), and Ives and Messerli (1989) have shown the severe limitations of the Himalayan Degradation Hypothesis, and explored the abilities of local grassroots environmental managers to reduce the threat and effects of environmental degradation. Similarly, Leach and Mearns (1996), Fairhead and Leach (1996) and Adams and Mortimore (1997) have shown that in West Africa indigenous rural land users, rather than being destroyers of environment, have been able to maintain and increase environmental productivity. This has been achieved through maintaining a balance between the amount and constituents of forest and grassland cover, using traditional land management techniques but responding to changing socio-economic environments. In East Africa, Tiffen *et al.* (1994) investigate the processes leading to the recovery of the landscape of Machakos District in Kenya. The Machakos experience is significant for investigations of degradation and development for several reasons. First, over a period of 60 years a Malthusian degradation of landscape has been succeeded by a Boserupian resurrection of the same landscape, despite a six-fold rise in human population. Second, because the recovery of landscape has been accompanied by and linked to strong improvements in human welfare. Third, the improvements in physical and human environments have been achieved through a complex blend of externally generated technical innovations and economic changes, but their successful adoption has been due to indigenous initiative. Finally, as Toulmin (1995) notes in a review of this work, the Machakos miracle was created by ordinary people adapting to livelihood opportunities.

The creation and improvement of the environment is more easily achieved with higher populations as is shown by Scoones (1997) who examines the ways and circumstances in which the productivity of soils in Zimbabwe have been created by labour-intensive garden-scale farming. Much of the garden-scale farming is carried out by women, while men manage soils under less intensive management regimes which remain at low levels of productivity. The benefits of environmental improvement, however, are not necessarily spread equitably throughout the community (Schroeder, 1997). Schroeder finds that in land reclamation schemes in the Gambia women, who have created productive market gardens through successful management of soil and water, have lost some of the improved land to senior men. Issues of equity and entitlement to the environment are discussed later.

Increased rural populations may lead to environmental gains beyond the increased productivity of the land. Kandeh and Richards (1996) find that in Sierra Leone, an increase in rural population may also lead to increased biodiversity as more intensive use of landscape can create more diverse environments. Densely peopled rural areas in Sierra Leone have high biodiversity and the apparently pristine diverse rain forest is in fact very much the product of human activity, a conclusion similar to that of Fairhead and Leach (1996) in Guinea.

One effect of the arguments around neo-Malthusian and Boserupian interpretations of human/environmental relations has been to focus attention on the details of those processes which underlie these interactions, a theme followed up by several of the present collection of papers. A further effect has been that they have led to a more detailed consideration of the social, political, cultural and economic agendas of the actors in the environmental management system. These agendas are discussed in the next section.

## POLITICAL ECOLOGY

Political ecology, the study of the 'politicized environment' (Bryant and Bailey, 1997), is a pluridisciplinary investigation, using the methods of the social sciences, which seeks to understand the human processes leading to



investigation of ethnoscience and ethnotechnology. It places an emphasis on the local and place-specific, a preference influenced by the ideas of Schumacher (1973) for the small scale and low impact. The ideal of low external input to local systems of production and reproduction of labour and nature, with the aim of empowering local communities is a key factor in ecopopulist ideology. Analysis and action, centred on the grass roots and a gendered interpretation of livelihood systems is another element. Ecopopulism may be accused of dreamy idealism, a naively romantic view of the Third World (Adams, 1990); blindness to the poverties, structured inequalities and inequities of existing Third World societies and failure to recognize the wishes of Third World people to access the lifestyle of the developed world (Ruttem *et al.*, 1999). Nevertheless, much of the incisive reassessment of people/nature in the Third World has been from the viewpoint of ecopopulism. It has also been achieved through the deconstruction of explanatory ecological modernist narratives of environmental degradation (Englund, 2000).

In addition to the main modes, several other issues relating to political economy are relevant to the papers in this collection and are considered in the next section.

#### GOVERNANCE, SOCIAL JUSTICE, DEMOCRACY AND HUMAN RIGHTS

The eco-and neopopulis modes of political ecology see the world from a worm's eye view; – from the position of individuals, households and communities, or at least from what the academic believes to be their position. For a discussion of the ideological agendas associated with types of populism see Blaikie (2000). The grassroot perspective emphasizes the need to devolve power to manage environments to localities, whether by the indigenous local community, by CBOs, by people's organizations (POs) or in association with NGOs of different types and extents of participation (Woodhouse, 1997; Amalric, 1999). Colonialism and political modernization have imposed centralized, remote, top-down styles of environmental management, normally in state-centred forms of governance (Pierre, 2000). This model of management is so well established that to many people it appears normal (Bryant and Wilson, 1998). Typically, central governments have taken direct control of what was formerly common property resources, such as forests, restricting or limiting access and land-use rights (Bryant and Bailey, 1997). In the Third World, after a long history of colonial land expropriation, the predatory global economy and national or local elites continue to deprive less powerful local people of land and leave them little choice other than to use non-resilient, more hazardous and easily degraded environments. This is true of both rural and urban environments. The result is the destruction of the base for livelihoods, the destruction of environments, the increase of risk and the creation of ill health.

The administrative weakness of many states, collusion between elites and outsiders, the dominance of militaries with their links to elites and the weakness of the voice of local poor people, further impair the efficiency and effectiveness of state-centred models of governance (Amalric, 1999). In consequence, state agencies manage environments ineffectively. Meanwhile inequitable power relations persist.

During the last 20 years, the deregulation of markets, the volatility of capital, the growth of the economic strength of multinational enterprises, the cults of the privatized and market economies and the hollow state, have weakened the power of central states (Pierre, 2000). This has allowed the development of pluralized modes of governance in the First World. International aid agencies have followed this lead in the Third World by seeking alternative models for the support of developmental and environmental management activities, rather than using inefficient state agencies. Similarly, First World governments have attempted to impose good governance and democratization, linked to free markets, on the Third World (Bush, 1996). In many cases this is achieved through condition imposed with aid packages (Bryant and Bailey, 1997). These condition cover such matters as externally monitored elections, environmental restoration or preservation, improvements in the conditions of women and children, and are in many cases resented, and regarded, by Third World governments as neocolonialism. Governments pay lip service to improvements whether in human rights or environmental maintenance.

Bush (1996) suggests that support for grassroots development would be achieved better through the building of a strong civil society. Civil society is by definition independent of the state. By creation of a pluralist range of sources of power able to resist bad governance, democracy is strengthened. In the development of better

governance (Amalric, 1999), the free flow of information is essential. For example, information on laws, rights, policies, technologies and innovations need to be spread widely through the whole of society and not restricted to educated elites. Though kinship and ethnic links may help to spread information and democracy, this will be more effective if supported by more formal networks. A free press and literacy are undoubtedly the best agents for uncomplishing this.

### ENVIRONMENTAL SECURITY

Until the realization that the Cold War was ending, security had been an issue of high politics, concerned mainly with the military security of the state. This had been so from the time of Plato around 400 BC, via Machiavelli and Hobbes. This state-centred view of security is particularly associated with realist and neorealist schools of international relations theory. In 1992, however, the Security Council of the United Nations stressed the non-military aspects of security, thus extending both the domains and characteristics of security (Wohlgemuth *et al.*, 1999). The characteristics of security include: military, political, economic, social, human and environmental. Domains include: international, national, regions, communities, households and individuals (Wohlgemuth *et al.*, 1999). Pettiford (1996) includes, in the category of characteristics, land security and security against natural hazards, drawing attention to the need for security as a basis for sustainable development. In Africa during the 1990s, military and political insecurity increased to catastrophic levels in Somalia, Rwanda, Burundi, Sudan, The Republic of the Congo, Angola and elsewhere. This added greatly to the effects of natural hazards such as the Somali drought of 1993 and the Sudanese drought of 1998–99. Above all the insecurity was most intense at the level of members of certain ethnic groups such as specific Somali clans like the Dinka, Nuer and Tutsi. At the level of the household, the living environment or the conditions for life became intolerably degraded. Environmental management was neglected, environmental destruction (a method of warfare) was widespread and accessible areas of environment became greatly degraded.

Obi (2000) links environmental security with processes of globalization. Globalization leads to marginalization and impoverishment of people and thence to the degradation of environments or forcing people to move to degraded environments. He sees the choice for rural Africans as either moving to cities, or squabbling with other Africans as they attempt to survive in degraded environments. Obi identifies environmental insecurity as the effect of extractive and transformative processes in human/nature interactions, but cites the driving force behind degradation and insecurity as coming from outside Africa.

### SUSTAINING LIVELIHOOD, COPING AND ENTITLEMENT

Starting with the work of Chambers and Conway (1992) livelihood analysis has become a valuable technique for examining the methods by which people are able to survive. Livelihood analysis allows an escape from misleading categorization of people as 'farmer', 'herdsman' or 'housewife', when the reality is that most people and households have many sources of support. Similarly, the different components of the environment (for example, trees) have multiple functions in supporting households' existence. A particular advantage of livelihood analysis is that it can function equally well for urban and rural areas and for the many households, which access both.

The concept of livelihood is valuable in investigations of environmental degradation because 'the environment in the Third World is largely a livelihood issue' (Bryant and Bailey, 1997: 159) and changes in environmental quality impact directly on human welfare. This is particularly true for the poorest, many of whom depend directly on the physical environment and especially on common property resources because they cannot afford to access any others. The poorest thus suffer directly the effects of environmental degradation, condemned by poverty to live in the least desirable, usually the most degraded, environments.

Murray (2000) examines the technique of sustainable livelihood analysis, which has been used widely since 1997, when the UK Department of International Development (DfID) supported the use of the methodology. Individuals and households use different forms of capital: natural, human, financial, social and physical, to cope with aspects of their vulnerability through their livelihood strategies (DfID, 1999). The concept, emphasizing

potential, competence, capacities and strengths, rather than weakness and need, relates physical environment directly to opportunities and constraints for survival and self-organized development: a focus on agency. Through sustainable livelihoods, sustainability is interpreted as a function of and the successful management of the physical environment, economy, social environment and institutions, rather than a reductionist, one-dimensional concentration on one factor. In the analysis of environmental degradation one advantage of sustainable livelihood analysis is that it is possible to model the effects of loss of environmental quality, whether due to expropriation, physical degradation or natural hazard.

Adams *et al.* (1998) proposed that the study of household coping strategies, normally restricted to investigations of famine and food security, could be of broader value in understanding household decisions in normal life. Famine coping strategies consist of a sequence of actions, such as sale of possessions or decision to migrate, according to the severity of food insecurity. Normal life for many people is a series of crises of differing intensities, with which households cope by a constant balancing of livelihood, consumption, health and status (Adams *et al.*, 1998). Crises may arise from within the household, for example through debt, illness, marriage or the death of a key member. Crises may be generated externally, for example through environmental degradation. Again the emphasis is on competence and the ability to respond to threat and environmental degradation is seen in the broader context of household survival.

The Institute for Development Studies has investigated the use of environmental entitlement analysis, a technique paralleling sustainable livelihood analysis. Entitlement analysis, developing from Sen's (1981) work on famines, is built around the realization that human actions are critically constrained by the rules of social behaviour, codified as customary and jural law. Endowments such as labour, health and time can be traded with others, or with nature, in the creation of livelihoods. Poverty and vulnerability reflect weak entitlements. Environmental entitlements analysis entails examination of both livelihood strategies and physical environment, emphasizing the dialectical relation between the two, and elucidating the effect of changing and unchanging entitlements to commonly owned and privately owned resources, in the creation, maintenance and destruction of both livelihood and material resources.

#### MARGINALITY AND VULNERABILITY

Jusilla *et al.* (1999) find that the process of marginalization has been investigated for some 25 years. Probably not by coincidence, this is a period coinciding with concern with regard to the negative effects of the processes of globalization. Marginality may be ecological, economic, social, political or cultural; complex interactions between these domains may act to reinforce each other. Marginalization can be identified as a structural process at scales from global to household and the process may vary through time. Marginality, by simple definition, implies limitations. In the case of ecosystems these are of productivity; in human systems they are limitations on freedom of action.

Though there is not yet an operational definition of the term (Jusilla *et al.*, 1999) the concept of marginality, which can be applied to people and environments, illuminates restrictions in marginal people's options in the management of sensitive environments (Blaikie, 1985). That marginal people are condemned to make their living in marginal environments, whether rural or urban, is perhaps the essential truth of political ecology. With the exception of those who deliberately marginalize themselves through criminality, marginal people are unlikely to have access to resources needed to overcome restrictions of marginal environments enabling them to live beyond the limits of subsistence. Thus marginality reinforces and reproduces itself.

Marginality is closely related to the vulnerability of both people and environments. Blaikie *et al.* (1994: 9) define vulnerability, with respect to people, as 'the characteristics of a person or group in terms of their capacity to anticipate, cope with, resist and recover from the impacts of natural hazard'. The same authors, however, start their book by stressing that the conditions of daily life for many people are bigger threats than apparently devastating natural hazards. It would therefore be reasonable to extend the definition to include the daily life hazards. Degraded environments, whether physical or human, either degraded by nature or society are very much part of daily life. As Blaikie *et al.* (1994) explain, there are strong links between degradation of land and the risk of other, more intense hazards.

## URBAN AND INFORMAL SECTORS

Two papers in this collection (by Emmel and Soussan and Howorth *et al.*) are concerned with urban environments: the creation of a system of urban and periurban agriculture and the development and improvement of environmental services. These papers both deal with the building of better environments, against the opposition of official authorities. In both cases, this is achieved through the informal economy. Urban and periurban agriculture allows the production of foodstuffs for subsistence and for sale. Improvement of environmental services in degraded urban areas directly supports reproduction.

The degraded environments of the informal sector housing in Third World cities continue to contribute to severe health problems. In particular the inadequate quantity and quality of the household water supply, inadequate sewage and waste disposal and the effects of crowding reflect the continuing inability of city authorities to supply infrastructural services and adequate housing. Kreibek (2000) attributes these failings during the last 20 years to rapid population growth and immigration, economic decline, political instability and institutional decay within cities. Thus, limitations in both financial resources and administrative capacity reduce the ability of the city managers to supply needs. Urban population growth rates in subSaharan Africa are from 4–7 per cent per annum (Fekade, 2000) and this increase in population in itself would, seriously challenge formal management systems. Both Kreibek (2000) and Fekade (2000) argue that the informal sector has had to compensate for the failure of the formal sector to supply housing and adequate services. They specify insecure land tenure as a critical limitation, though land scarcity, partly created by speculation is an additional problem. Most of the land in urban Africa is now obtained through purchase (Koronde, 2000), a process involving the use of agents, (Briggs and Mwamfupe, 1999), and adding to costs. Colonial heritages of inappropriate planning and management systems create further obstacles to the creation of acceptable environments (Lerise, 2000). 'Existing land use controls and regulations are becoming parts of the problem and not of the solution' (Fekade, 2000: 130).

In the periurban zone of Dar es Salaam, land ownership is further confused by the principle that land rights in rural areas of Tanzania are governed by customary law and in urban areas, at least in principle, by statutory law. As the city expands and rural areas are incorporated, the ownership of land becomes questionable. (Briggs and Mwamfupe, 2000). They also note that during the last decade, the commoditization of land and the investment of venture capital have led to marked increases in land prices and deprived the poor of food security

Finally, 'Inefficient, illegitimate, unjust and corrupt behaviour by state officials in land allocations and in resolving land disputes' (Briggs and Mwamfupe, 1999: 277) adds to the cost, slows the process and further excludes the poor. This expansion of capitalist agriculture, with a labour force recruited daily from cities has now spread as far as 100 kms into the rural hinterland of cities such as Sokoto, supported by World Bank Agricultural Development Project investment in irrigation pumps (Blundell *et al.*, 1999).

The significance of the informal economy has been investigated, particularly in the development and functioning of the urban system, since the 1970s and the work of the International Labour Organization (ILO) in Nairobi (Mhone, 1996). The informal slums or squatter settlements, characteristic of Third World cities, housing up to two-thirds of the population of some sub Saharan cities, are the most tangible evidence of the activities of the informal sector. Central governments and city managers perceive informal settlements, like much of the informal social economy, to be illegal and undesirable. Bugnicourt (2000) claims that half of the people of Africa live in this social economy and Karl (2000) that one-quarter of the world's labour force are members. Any attempt to improve the environment of Third World cities, indeed of the Third World environments generally, or to respond to the problems of poverty, is likely to fail, unless conceived in the context of the informal social economy.

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