

ENVIRONMENTAL ENTITLEMENTS

A Framework for Understanding the Institutional Dynamics of Environmental Change¹

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Summary

While there is now widespread consensus within international development circles that 'sustainable development' should be based on local-level solutions derived from community initiatives, there is also a growing perception that the practical implementation of what is termed 'community-based sustainable development' often falls short of expectations. This overview paper seeks to complement and add to this emerging critique, with a particular focus on the implications of intra-community dynamics and ecological heterogeneity. It offers a conceptual framework that highlights the central role of institutions in mediating the relationships between environment and society, where institutions are understood as regularised patterns of behaviour between individuals and groups in society. This framework is grounded in an extended form of entitlements analysis used to explore the ways differently positioned social actors command environmental goods and services that are instrumental to their wellbeing. Further insights are drawn from areas of scholarship including analyses of social difference and social agency; 'new', dynamic ecology; new institutional economics; structuration theory; and landscape history. The theoretical argument is illustrated with reference to recent empirical research in India, South Africa and Ghana.

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1 Introduction

The consensus in the wake of the United Nations Conference on Environment and Development (UNCED) suggests that the implementation of what has come to be known as 'sustainable development' should be based on local-level solutions derived from community initiatives (Ghai and Vivian 1992; Ghai 1994). This reasoning comes with a long pedigree, dating at least from The Ecologist's (1972) 'Blueprint for Survival', Schumacher's (1973) **Small is Beautiful** and, more recently, the Brundtland Commission (WCED 1987; Conroy and Litvinoff 1988). Statements of intent on global environmental problems issued following the 1992 Earth Summit, including Agenda 21 and the Desertification Convention, strongly advocate as solutions a combination of government decentralisation, devolution to local communities of responsibility for natural resources held as commons, and community participation (Holmberg *et al.* 1993). Such approaches – evident in the policies and programmes of national governments, donor agencies and nongovernmental organisations (NGOs) – argue for 'co-management', or an appropriate sharing of responsibilities for natural resource management between national and local governments, civic organisations, and local communities (Adams and McShane 1992; Berkes 1995; Baland and Platteau 1996; Borrini-Feyerabend 1996).

The practical implementation of community-based sustainable development initiatives, however, has often fallen short of expectations. A number of reasons have been identified, including a tendency (despite rhetoric to the contrary) for the 'intended beneficiaries' to be treated as passive recipients of project activities (Pimbert and Pretty 1995; cf Arnstein 1969); a tendency for projects to be too short-term in nature and over-reliant on expatriate expertise; and a lack of clear criteria by which to judge sustainability or success in meeting conservation or development goals (Western *et al.* 1994). Others suggest that the interests of certain social groups have been consistently marginalised (Hobley 1992; Sarin 1995).

In this paper, we seek to complement and add to this emerging set of critiques and attempts to improve the practice of community-based sustainable development, through a particular focus on institutions as mediators of people–environment relations. We see institutions as 'regularised patterns of behaviour between individuals and groups in society' (Mearns 1995a: 103), rather than as community-level organisations. Yet the latter view prevails in current approaches to community-based sustainable development, when they are concerned with institutions at all. In the emerging consensus, community-level organisations are commonly assumed to regulate the use of relatively homogeneous environments in the community's interests. Environmental degradation is assumed to reflect a growing lack of synchrony between the community and its natural environment, and the implied solution is to reconstitute community-based natural-resource management institutions so as to restore harmony to environment–society relations. Recent advances in ecological theory suggest, however, that many more environments than was previously thought are characterised by high variability in time and space. This has important implications for managing natural resources and environmental risk, and suggests that understanding environmental change involves looking beyond natural-resource

depletion or degradation in the aggregate. Similarly, local communities may be shown to be dynamic and internally differentiated, and the environmental priorities and natural-resource claims of social actors positioned differently in power relations may be highly contested. These factors point to the importance of diverse institutions operating at multiple scale levels from macro to micro, which influence who has access to and control over what resources, and arbitrate contested resource claims.

To date, a poor understanding of such dynamic institutional arrangements has impeded practical efforts in community-based sustainable development. In this paper, we offer a review of relevant theoretical literature and build a conceptual framework, extending our earlier work on the notion of 'environmental entitlements' (Leach and Mearns 1991; Mearns 1995b, 1996a), to assist in understanding the role of institutional dynamics in environmental change. This framework seeks to elucidate how ecological and social dynamics influence the natural-resource management activities of diverse groups of people, and how these activities in turn help to produce and to shape particular kinds of environment. Rather than framing environmental problems simply in terms of aggregate population pressure on a limited natural-resource base, a more disaggregated entitlements approach considers the role of diverse institutions in mediating the relationships between different social actors, and different components of local ecologies. The insights derived from such analysis are intended to help target external interventions more effectively, whether the objectives are to protect and promote the environmental entitlements of particular social groups, or to foster particular environmental outcomes. Such forms of intervention, we argue, may involve a much more diverse range of institutions, whether locally or at the level of national legal and policy frameworks, than have been addressed in community-based sustainable development efforts to date.

The paper is organised as follows. Section 2 considers the prevailing assumptions underlying approaches to community-based sustainable development, and finds that they are flawed in their characterisations of communities and their local environments. Sections 3 and 4 review the theoretical foundations of these characterisations in the social and ecological sciences respectively, and offer alternative perspectives from contemporary debates on social and ecological dynamics and heterogeneity. In section 5, we outline the basis of our environmental entitlements framework, tracing its origins in the broader entitlements literature, defining terms, and specifying the distinguishing features of our own approach. Section 6 discusses in more detail the way we conceive of institutions, since these are the factors operating at different scale levels that undergird entitlement relations. In other words, a variety of formal and informal institutions influence which sets of social actors are able to command various environmental goods and services that are instrumental to their wellbeing. Our understanding of institutions is enriched by the alternative perspectives on community and ecology reviewed in sections 3 and 4, and leads us to a view of institutional change that takes seriously both history and power relations. Section 7 shows how the institutional dynamics that are at the core of the environmental entitlements framework also powerfully influence environmental change itself. Section 8 concludes the paper with some preliminary remarks concerning the implications of the analysis for improving policy and practical approaches to community-based sustainable development. Throughout

the paper, we refer to examples drawn from recent empirical research on community-based or co-management initiatives in the fields of forestry (Ghana), protected areas (South Africa), and watershed development (India).³

2 Narratives on Community and Environment

Our environmental entitlements framework is in part a critical response to key aspects of the community-based sustainable development consensus, so we begin by clarifying what is implied by this consensus. At least superficially, recent approaches to community-based sustainable development appear as diverse as their varied implementing agencies and natural-resource settings, yet they rest on a set of common assumptions about community, environment, and the relationship between them.

One fundamental assumption is that a distinct community exists. While definitions vary, approaches commonly focus on 'the people of a local administrative unit ... of a cultural or ethnic group ... or of a local urban or rural area, such as the people of a neighbourhood or valley' (IUCN/WWF/UNEP 1991: 57). Such communities are seen as relatively homogeneous, with members' shared characteristics distinguishing them from 'outsiders'. Sometimes social difference within communities is acknowledged, and explicit efforts are made, using participatory rural appraisal methods, for example, to specify the implications for project interventions. But all too often it is implied that the public airing of conflict is sufficient, and that social consensus and solidarity will necessarily result (cf. Mosse 1994).

Equally fundamental is the assumption of a distinct, and relatively stable, local environment (usually not defined) which may have succumbed to degradation or deterioration, but has the potential to be restored and managed sustainably. The community is seen as the appropriate body to carry out such restoration and care, and is envisaged as being capable of acting collectively towards common environmental interests. For instance 'primary environmental care', a term coined to encapsulate a range of operational experiences in the field of community-based sustainable development, has been defined as 'a process by which local groups or communities organise themselves with varying degrees of outside support so as to apply their skills and knowledge to the care of natural resources and environment while satisfying livelihood needs', (Pretty and Guijt 1992: 22).

The tendency to subscribe to obviously oversimplified assumptions is not confined to community-based sustainable development. It is now well recognised that most development programmes and projects that succeed in mobilising funds and resources rely on sets of simplifying assumptions about the problem to be addressed and the approach to be taken which provide what Hoben (1995) calls a 'cultural script for action' (cf Hirschmann 1968). Such assumptions are frequently linked together within what Roe (1991) has termed 'development narratives': stories about

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the world that frame problems in particular ways and in turn justify particular solutions. It is partly through narratives – or what others have theorised as development discourses (e.g. Ferguson 1990; Escobar 1995; Apthorpe and Gasper 1996) or received wisdom (Leach and Mearns 1996) – that assumptions are stabilised and rendered unquestionable, so that they gain power and persistence in project and policy arenas despite the frequent absence of empirical data to support them.

In the case of community-based sustainable development, a powerful, generalised narrative links the above, related assumptions. At some (usually unspecified) time in the past, so it goes, the community lived in balanced harmony with nature. Either population levels were so low that the environment was little disturbed, or community institutions, including ritual and traditional authority, served to regulate resource use so that society and environment remained in equilibrium. But the narrative goes on to suggest that this harmony has been disrupted, leading to a disequilibrium between people and environment, and hence to environmental degradation. A range of factors may be called to account, including population growth, technological change, the breakdown of traditional authority, commercialisation, modernity, social change and new urban aspirations, the immigration of stranger populations, or the intrusion of inappropriate state policies. What is required, the narrative suggests, is to bring community and environment back into harmony: 'policies that bring human numbers and life-styles into balance with nature's capacity' (IUCN/WWF/UNEP 1991: 10). This requires either the rediscovery and rebuilding of traditional, collective resource management institutions, or their replacement by new ones, such as the community management plans and village environmental committees so often associated with community-based sustainable development strategies.

Versions of this narrative are to be found in all three of our research sites, where they help to frame the ways that policymakers conceive of localised problems, and to justify the particular approaches taken in project interventions.

In Ghana, the landscape of the study area in Wenchi district of the northern forest–savanna transition zone is characterised by forest patches in savanna. In pre-colonial times, many policymakers suppose, the area was entirely covered by the semi-deciduous forest thought to be its natural climax vegetation. This vegetation cover was maintained by village communities that collectively practised forest farming styles (long rotational bush fallow and minimum tillage which preserved a root mat of forest species); that had effective traditional organisations which regulated forest product collection and fire setting; and whose traditional religious and ritual practices involved the preservation of certain areas of undisturbed natural forest as sacred groves. But changes during the twentieth century, accelerating during the last few decades, are seen to have disrupted this harmony between community and environment, encouraging progressive loss of forest to savanna. Migrants have increasingly settled from the north, bringing with them, it is argued, forest-destructive savanna farming practices. With the weakening of traditional controls, the use of bush fire is perceived to have increased for the worse. State laws have reduced security of tenure for local people and have weakened incentives to preserve trees and forest patches, while new commercial activities such as charcoal burning have hastened deforestation. Many initiatives by government, donors and NGOs are

attempting to re-establish and enhance local control over forest resources in the interests of reforestation and more sustainable management. Activities include encouraging communities to prepare management plans for remaining forest patches and sacred groves within their territory, which are to be recognised in state forest policy.

A strong narrative of environmental degradation also surrounds the Indian case study site. The Aravalli Hills of Rajasthan are portrayed as having been clothed, until the mid-twentieth century, in an unbroken green forest canopy, replete with wildlife. Rainfall was abundant, and pressure on forest resources was minimal from low populations of (mainly tribal) gatherers. Farming was largely confined to fertile valley bottoms irrigated under well-organised community systems. A series of changes are held to have denuded and 'desertified' the hills, with accompanying desiccation and soil erosion. In response to new market opportunities and changes in Rajasthani state policies associated with post-independence land reforms, growing populations deforested large areas of hillside for commercial wood fuel and timber sale. People subsequently grazed livestock there, under unregulated open-access systems which led quickly to overgrazing, while farming spread onto increasingly marginal hill land with accompanying soil erosion. This growing pressure from unregulated resource use is held to have gone hand- in- hand with a secular decline in rainfall. This narrative of decline justifies the perceived need to re-green the hills through watershed development programmes intended to bring the communities living within watershed boundaries back into harmony with their local environments through technical and organisational innovations to facilitate improved resource use. The Nayakheda watershed project, supported by the Udaipur-based NGO Seva Mandir, has promoted soil and water conservation and a system of enclosures to regulate the use of commons through a community-level committee. Working together for the common environmental good, it is argued, in turn promotes social cohesion and enhanced community capacity to engage in collective social and political action.

In the South African case, the coastal areas of the former Transkei in the Eastern Cape are regarded as areas of great conservation importance. Some argue that forest patches in ravines and along the coast are relics of once-large expanses of forest land and that the existence of rare, endemic species highlights the biodiversity significance of forest patches and intervening areas of coastal grassland. The established conservation narrative argues that such areas should be protected by controlling human use through the creation of nature reserves, strictly managing the fire regime and introducing certain game species. The level of human use should, it is argued, be limited to the selective harvesting of certain grass and tree species. According to some commentators, particularly within the new majority-rule government of Eastern Cape Province, community involvement is essential in order to encourage conservation awareness and compliance with regulations, and so community-based conservation initiatives are being encouraged.

We do not dispute all elements of these community-based sustainable development narratives, either in general or in relation to the specific cases. However, we do argue that in important respects they have provided misleading guidelines for policy. This is less because their assumptions about

community and environment are oversimplified than because they are basically flawed. We now develop this argument by addressing some of their foundations respectively in social and ecological theory, and by raising alternative perspectives put forward in recent theoretical debates.

3 Community, Social Difference and Dynamics

The assumption that communities can be treated as static, relatively homogeneous entities so often implicit in today's community-based sustainable development literature has identifiable roots in much earlier social theory. Early sociology and anthropology conceived of society as a bounded object or closed social system: a 'thing' more than the sum of its individual parts, analogous to an organism with its own goals and capacities (Durkheim 1895; cf Frisby and Sayer 1986). Individual members were seen as united by culture into 'moral communities' sharing common interests and mutual dependence. The related ideas of structural-functionalism, which came to dominate colonial anthropology (e.g. Radcliffe-Brown 1952; Fortes and Evans-Pritchard 1940), also find strong echoes in recent approaches to community-based sustainable development. Social structure was seen to drive rules which unproblematically governed people's behaviour and maintained social order. As a coherent system, social structure comprised parts that interlocked functionally to fulfil society's needs and maintain an equilibrium. Change to this equilibrial state – or traditional zero point – was conceived of mainly as being a result of external factors that precipitated breakdown and dysfunction, much as in community-based sustainable development narratives.

A dominant approach in ecological anthropology and cultural ecology, especially in the 1950s and 1960s, saw such functionally integrated societies as also functionally integrated with their environment; in much the same way that community-based sustainable development portrays community and environment as (once or potentially) linked in harmonious equilibrium. Society was seen as adapted to the environment through homeostatic feedback loops which ensured that resource use did not disrupt the ecological balance (e.g. Rappaport 1968). Social structure and institutions such as traditional authority and ritual were seen as maintaining this functional adaptation, often over and above the consciousness of community members.

Social science debates and empirical work have, however, fundamentally questioned many of these suppositions. First and most obviously, a very large body of work concerned with social difference, including much feminist scholarship, has highlighted the ways that gender, caste, wealth, age, origins, and other aspects of social identity divide and crosscut so-called 'community' boundaries. This work emphasises how diverse and often conflicting values and resource priorities – rather than shared beliefs and interests – pervade social life and may be struggled and 'bargained' over (e.g. Carney and Watts 1991; Leach 1994; Moore 1993). Equally, it draws attention to power – however theorised – as a pervasive feature of social relations (e.g. Lukes 1974; Gaventa 1995). Feminist work especially has shown clearly how institutions can shape and reproduce relations of unequal power and authority (e.g. Kabeer and Subrahmanian 1996; Goetz 1996). While an emphasis on social difference is now uncontroversial within development studies more generally, arising as it did out of a critique of

earlier, failed approaches to so-called 'community development', it is striking the degree to which simplistic notions of community are being reinvented in the context of practical efforts towards community-based sustainable development.

Second, and closely related, has been a sustained critique of structural-functionalist approaches – and others that privilege structure such as Marxism – from a perspective that emphasises actors, action and agency. As Long and others have forcefully argued, communities cannot be treated as static, undifferentiated wholes, since they are composed of active people and groups. The behaviour of social actors is not driven automatically and unconsciously by structures; rather they actively monitor, interpret and shape the world around them (e.g. Long and van der Ploeg 1989; Long and Long 1992).

Some of this actor-oriented work has been rightly criticised for being excessively voluntaristic, grounded in a methodological individualism rooted in the very different sociological traditions of Weber (cf. Lukes 1973). Interactionism and transactionalism in sociology and anthropology, for instance, tended to portray social life in terms of active decision-making and strategising by people with free choice (e.g. Barth 1992, Bailey 1969, Vincent 1978). Others have grappled with the links between agency and structure, emphasising how structures, rules and norms can emerge (and only exist) as products of people's practices and actions, both intended and unintended. These structural forms subsequently shape people's action, not by strict determination but by providing flexible orientation points which may either constrain or enable what is possible. Whilst some, routinised, action serves to reproduce structures, rules and institutions, other action has agency, serving to change the system and perhaps, in time, remake new rules (Giddens 1984; Bryant and Jary 1991; Long and van der Ploeg 1994; Bebbington 1994).

Such a perspective conceives of social change very differently from the community-based sustainable development narrative of external disruption to a static society or community. Rather, history is seen as a manifold process of interaction between external and internal actions and events, in which contingencies and path-dependency play a significant part. As Abrams (1982) and others have emphasised, history is central and necessary to sociological enquiry, as the lens through which the relationships between agency, structure and power – or social actors and institutions – become apparent.

These more critical perspectives do not reject the notion of 'community' altogether, but rather contextualise it by describing a more or less temporary unity of situation, interest or purpose among particular groups of social actors. For instance, the people of the Indian case study area are divided among at least seven multi-caste and multi-tribe hamlets, drawn from three different revenue villages, and associated with different occupations and resource priorities. Whether or not they are regarded as comprising a single community depends on one's perspective and scale of analysis. They may sometimes appear as a larger, united community, for instance when village committee members represent Nayakheda to the NGO project staff, or in apparently uniting to support a tribal member's election to the local Panchayat council (Franzén 1996). Such representations of wider community are arguably best seen as actively created and manipulated by powerful actors for particular (and not

necessarily shared) purposes, for instance in maintaining the project's support in brokering local politics. In other words, 'community' may be the contingent and temporary outcome of dynamic interaction between differentiated social actors, more than an enduring whole (cf Mosse, forthcoming).

4 Dynamic Ecologies

The science of ecology over much of the twentieth century – including the science that has influenced community-based sustainable development – has been built upon notions of equilibrium, balance, harmony and functional order, showing notable parallels with structural-functionalist theories in the social sphere. But, just as there are problems with structural-functional explanations of community and social relations, so interpretations of nature and environment based on assumptions of balance and system regulation are subject to dispute.

Key concepts in ecological science include gradual, linear change, homeostatic regulation of systems and stable equilibrium points or cycles (Cherrett 1987; McIntosh 1985; Pimm 1991). These concepts derive from much longer traditions of thought about the natural world, and from religious ideas about a divine, natural order (Worster 1985, 1993). The idea of the 'balance of nature' has been central to this thinking, and the quest for such balance or equilibrium has dominated natural science enquiry. Evidence, however, has proved extremely limited; as Connell and Sousa (1983: 808) comment: 'If a balance of nature exists it has proved exceedingly difficult to demonstrate.' Despite this, the conceptual foundations of mainstream ecological science have been informed by equilibrium thinking.

Theories of vegetation succession, population modelling, ecosystem functioning, or species– area relationships all have equilibrium assumptions at the core of their models and, not surprisingly, their findings and applied management recommendations (cf Botkin 1990; Zimmerer 1994). Thus succession theory has emphasised linear vegetation change and the idea of a stable and natural climax. Since Clements's early work in the United States (Clements 1916), this has become the guide for managing rangelands and forests, the benchmark against which environmental change is assessed. In the Ghana case study, for instance, semi-deciduous forest has been seen as the natural climax vegetation, and its restoration has been identified as a key management objective. Equally, models of population dynamics identified carrying capacities and maximum sustained yield levels for managed animal populations, using calculations based on assumptions of predictable and linear growth patterns in stable environments (Caughley 1977). Management regimes for domestic livestock, wildlife and fisheries populations have been devised according to such assumptions; they have, for instance, informed the enclosure strategies for grazing and fodder management promoted in the India case study. At the same time, following the classic work by Odum (1953), ecosystem theory has focused on the system regulation of flows and so on how environmental impacts are assessed. The assumption is that natural systems are homeostatically regulated and, if disturbed, such regulation may collapse with detrimental consequences. Finally, conservation biology has claimed a stable relationship

between species diversity and area (MacArthur and Wilson 1967) and so a basis on which biodiversity policy could be created and protected areas could be designed. For example, in South Africa a control-oriented protected area policy has dominated conservation thinking for much of the twentieth century, resulting in an exclusionary approach to national park and nature reserve management (Carruthers 1995).

These ideas in ecological science have made some major contributions, of course, but as with any theory or model, it is unwise to assume they apply in all places, all of the time. Whilst there were disputes within each of these areas of theory as new empirical material emerged, new ideas made little headway and rarely challenged the core assumptions of the equilibrium framework, until the explosion of interest in mathematical ecology and the stability properties of models and – later – real, natural or managed systems during the 1970s (e.g. May 1976, 1977, 1986). This period saw the emergence of key concepts making up non-equilibrium theory and, more broadly, what has been termed the 'new ecology' (e.g. Botkin 1990).

What does the new ecology look like? Three themes stand out (cf Scoones in preparation). First, an understanding of variability in space and time, which has led to work on time-series population analysis, stochastic and dynamic modelling (Hastings *et al* 1993; Elner and Turchin 1995) and an interest in the relationships between disturbance regimes and spatial patterning from patches to landscapes (e.g. Kolasa and Pickett 1991; Turner 1989). Second, nonequilibrium perspectives suggested a need to explore the implications of scaling on dynamic processes, which has led to work on hierarchies and scale relationships in ecosystems analysis (Allen and Hoekstra 1991; O'Neill *et al* 1986; Dunning and Stewart 1995). Third, a recognition of the importance of history on current dynamics has led to work on environmental change at a variety of timescales (Worster 1990; Williams 1994). The latter parallels the historical emphasis of much recent social theory, and invites analytical attention to the historical relationships between environmental and social change.

These ecological themes have prompted increased interest in understanding dynamics and its implications for management. For example, recent thinking in ecology informs our understanding of the key relationship between savanna grassland and forest areas. For both the Ghana and South Africa case study sites, this is an important issue, as different products and different environmental values are associated with forests and grasslands. The conventional, equilibrial interpretation of succession theory sees forest as a later successional form, closer to natural 'climax' vegetation, and the presence of grasslands as evidence of degradation from a once-forested state. This linear interpretation of vegetation dynamics has a major influence on the way such landscapes are viewed by policy makers and others (Fairhead and Leach 1996). But in some areas forest and savanna may be better seen as alternative vegetation states influenced by multiple factors. Despite powerful environmental narratives to the contrary, there is strong evidence, in both the forest–savanna transition zone of Ghana and the coastal grasslands of the former Transkei in South Africa, that forest or woodland areas have been increasing over the century timescale as a result of a combination of disturbance events (Fairhead and Leach forthcoming for Ghana; Feeley 1987 for South Africa). Changes in soils, shifts in following

systems, manipulation of fire regimes, alterations in grazing patterns, and climatic rehumidification have combined to change the relationship between forests and grasslands. This dynamic interaction is thus less the outcome of a predictable pattern of linear succession, but more a result of combinations of contingent factors, conditioned by human intervention, sometimes the active outcome of management, and often the result of unintended consequences.

With a view of ecology that stresses spatial and temporal variability, dynamic, nonequilibrium processes and histories of disturbance events, a different view of the landscape emerges: a landscape that is transforming, not simply degrading, and one which is emerging as a product of both social and ecological history, not simply the result of deterministic patterns of environmental change.

5 Environmental Entitlements

We have argued, then, that communities cannot be treated as static or undifferentiated, made up as they are of active individuals and groups. The environment, equally, needs to be disaggregated into its constituent parts, and viewed dynamically. We now go on to consider the implications of these dynamic, differentiated views for analysing the links between people and environment.

Many analyses of people–environment relations, including those informing many community-based sustainable development narratives, conceive of a simple, linear relationship between population and resource availability, affected only by such factors as level of technology (cf. Ehrlich and Ehrlich 1991). There is little space left in this formulation for social actors and institutions. The concern with community organisations in many approaches to community-based sustainable development serves merely to modify this Malthusian model; a functional community is seen as playing an overall, regulatory role, controlling resource use and technology in such a way as to limit environmental impact in the interests of a collective good.

But with environmental issues framed in terms of 'people in places' and as part of history, rather than simple, static conceptions of natural resource availability, a very different set of questions about people–environment interactions arise. We need to ask, for instance, which social actors see what components of variable and dynamic ecologies as resources at different times? How do different social actors gain access to and control over such resources? And how does natural-resource use by different social actors transform different components of the environment?

To address such questions we draw on entitlements analysis, an approach first developed by Amartya Sen to explain how it is that people can starve in the midst of food plenty as a result of a collapse in their means of command over food (Sen 1981). Undue emphasis on aggregate food availability, Sen argues, diverts attention from the more fundamental issue of how particular individuals and groups of people gain access to and control over food. Thus 'scarcity is the characteristic of people not **having** enough ... , it is not the characteristic of there not **being** enough. While the latter can be the cause of the former, it is one of many causes' (Sen 1981: 1).

By analogy with this approach for explaining famine, we have argued that entitlements analysis is useful in explaining how the consequences of environmental change in general, and access to and

control over natural resources in particular, are also socially differentiated (Leach and Mearns 1991; Mearns 1995b, 1996a). Just as with the food and famine debate, the environmental debate has been dominated by a supply-side focus, often giving rise to Malthusian interpretations of resource issues. But, as Sen observed, absolute lack of resources may be only one of a number of reasons for people not gaining access to the resources they need for sustaining livelihoods. It is important not to polarise this distinction excessively, however, as others have pointed out in the context of famine analysis: resource availability and access are often interconnected. Conflicts over access often intensify when the resources in question become scarce in absolute terms (Devereux 1988; Nolan 1993).

Before exploring our own 'extended entitlements' approach, applied to environmental questions, it is worth returning to the origins of the approach in Sen's work, in order to clarify concepts and establish any key distinctions between the approach developed here and Sen's original work. In Sen's concept of entitlements, a number of central elements are stressed. First, Sen emphasised entitlements in the descriptive sense. The term 'entitlements' therefore does not refer to people's rights in a normative sense – what people **should** have – but the range of possibilities that people **can** have. In Sen's words, entitlements are 'the set of alternative commodity bundles that a person can command in a society using the totality of rights and opportunities that he or she faces' (Sen 1984: 497). While Sen was careful to specify that entitlements refer to 'alternative commodity bundles', in practice his principal concern was with command over food.

Second, entitlements arise through a process of 'mapping': endowments, defined as a person's 'initial ownership' for instance of land or labour power, are transformed into a set of entitlements. According to Sen, entitlement mapping is 'the relation that specifies the set of exchange entitlements for each ownership bundle' (Sen 1981: 3). In Sen's work, these entitlement relations may be based on processes such as production, own-labour, trade, inheritance or transfer (Sen 1981: 2). Sen's concern was therefore to examine how different people derive entitlements from their endowments and so improve their wellbeing or capabilities, a descriptive approach to understanding how, in a given legal setting, people do or do not survive.

Third, within this descriptive framework, Sen had a broader agenda within moral philosophy, which was to highlight the injustice of a legal system that can legally permit people to starve (Sen 1981). In order to emphasise this moral point, Sen has at times referred to 'entitlements' in a normative sense, and initially restricted the notion of entitlements to command over resources through formal legal arrangements, thus downplaying other, extralegal or informal means of commanding resources which may become especially important during times of famine (Gore 1993). This is one of the sources of confusion within the literature on entitlements, on which Gasper (1993) has offered helpful clarifications.

As a framework for analysing how different people gain access to and control over resources, we find Sen's descriptive notion of entitlements useful. However, along with others (Gasper 1993; Gore 1993; Devereux 1993, 1996; Jenkins 1997), we find some elements of Sen's framework too restrictive. First, at least in his early work, he focuses almost exclusively on entitlement mapping –

how endowments are transformed into entitlements – and pays limited attention to endowment mapping - how people come to have their 'initial' endowments. Instead of assuming that endowments are simply given, our extended entitlements framework focuses on how both endowments and entitlements arise, a possibility Sen recognised in his later work with Jean Drèze (Drèze and Sen 1989: 23). In their use of an entitlements approach to analyse access to environmental justice in urban areas, Jenkins and colleagues emphasise another, nonmaterial dimension to endowments: namely, those institutional skills that enable people to access official decision-making structures and other public goods (Jenkins 1997; cf. Rein 1983). We return to this dimension of endowments below.

Second, Sen is principally concerned with command over resources through market channels, backed up by formal-legal property rights. Although in later work (e.g. Sen 1984, 1985; Drèze and Sen 1989: 11), the idea of 'extended entitlements' is introduced, it is unclear to what extent the concept is restricted to mechanisms governing the intra-household distribution of resources, and to what extent it also includes other nonmarket channels of entitlement mapping such as public action. Either way, in our view, Sen's version of 'extended entitlements' does not go far enough. Since there are many ways of gaining access to and control over resources beyond the market, such as through kin networks, and many ways of legitimating such access and control outside the statutory legal system, including customary law, social conventions and norms, it seems appropriate to extend the entitlements framework to the whole range of socially sanctioned as well as formal-legal institutional mechanisms for gaining resource access and control (cf Gore 1993).

Given these concerns, we adopt the following definitions of key terms⁴. First, **endowments** refer to *the rights and resources that social actors have*.⁵ For example, land, labour, skills and so on. Second, **entitlements**, following Gasper (1993), refer to *legitimate effective command over alternative commodity bundles*. More specifically, **environmental entitlements** refer to *alternative sets of utilities derived from environmental goods and services over which social actors have legitimate effective command and which are instrumental in achieving wellbeing*.⁶ The alternative set of utilities

⁴ These differ in certain respects from our earlier work on environmental entitlements (Leach and Mearns 1991; Mearns 1995b, 1996a), which did not effectively establish the distinction between endowments and entitlements (Gasper 1993).

⁵ Devereux (1996) identifies units of analysis as one of two important sources of 'fuzziness' in Sen's entitlements approach. For Sen the unit of analysis is held to be the individual, but the analysis may also apply at the collective level (e.g. household, group, class) by assuming a notional 'representative individual' (Osmani 1995: 254). Devereux is concerned that this device 'sidesteps the reality that any group of people is composed of diverse individuals who are neither homogeneous nor "representative"' (Devereux 1996: 2). We adopt the 'social actor' as our unit of analysis, which both meets Sen's (and Osmani's) requirements and overcomes Devereux's concern. While 'social actor' will often refer to an individual person, it could also refer to a group who share a certain set of characteristics (e.g. age, class, gender, caste) held to be important for the particular entitlement mapping in question. The empirical contexts with which we are concerned, like Devereux's, are characterised by property rights that overlap and are contested. (Devereux identifies this as the second source of fuzziness in the entitlements approach.) The use of 'social actor' as the unit of analysis allows for multiple, complex resource claims to be separately specified to the level of actors who share similar bundles of claims without necessarily moving to the level of each individual person. It is not necessary for analytical purposes to disaggregate to all possible degrees of difference among social actors in order to demonstrate the importance of particular forms of entitlement mapping for different social actors.

⁶ For the purposes of our analysis, we adopt the following working definitions, based on Leach and Mearns (1991). **Environmental goods** refer to the specific source (material and energy natural-resource) inputs that are essential to sustaining the livelihoods of present and future generations of people. **Environmental services** refer to sink (pollution-absorbing) and other service functions of the environment (e.g. the hydrological cycle) that are also essential to sustaining the livelihoods of present and future generations of people. Environmental goods are **resources** in the sense that they are 'materials available "in nature" that are capable of being transformed into things of utility to man [sic]'

that comprise environmental entitlements may include any or all of the following: direct uses in the form of commodities, such as food, water, or fuel; the market value of such resources, or of rights to them; and the utilities derived from environmental services, such as pollution sinks or properties of the hydrological cycle. Entitlements, in turn, enhance people's **capabilities**, which are *what people can do or be with their entitlements*. For example, command over fuel resources derived from rights over trees gives warmth or the ability to cook, and so contributes to wellbeing.

Consider the example of a cow, owned by a particular social actor⁷. The cow is that actor's endowment. Alternative sets of utilities that could potentially derive from that cow include various combinations of the following: milk, blood or meat for food to feed the social actor and her family members; cash income from the sale of the live animal, or from its meat, hide, tail and other products; future breeding potential, representing a form of interest-earning savings; or a contribution to the brideprice of a family member. The cash income, food (stock of meat or flow of milk or blood), 'interest' (in the form of future calves) and social value constitute the environmental entitlements accruing to that social actor as a function of her initial endowment of a cow. Those entitlements in turn provide the actor with various capabilities, depending on the actual set of utilities derived, including nutrition for herself and her family, social status, or the ability to satisfy other basic needs through the market.

However, since endowments and entitlements are analytical constructs, the distinction between them depends on the empirical context and on time. Environmental entitlements analysis thus reflects a cyclical rather than a linear process, at different time scales. For a given social actor at a particular time period, entitlements represent the set of potential outcomes given the initial endowments set, depending on the actual constraints that that actor faces and the opportunities open to her. Those entitlements may in turn represent endowments at another time period, from which a new set of entitlements may be derived. There is nothing inherent in a particular environmental good or service that makes it *a priori* either an endowment or an entitlement. In the above example, the cow was the endowment and the alternative set of utilities derived from the cow were the entitlements. At an earlier time period, the cow might form part of the environmental entitlement set of the social actor, where access to a village commons is one of the particular endowments of interest. The set of utilities from that commons might include fuelwood, medicinal plants and wild foods as well as grazing. In practice, the social actor may or may not effectively be able to exercise her rights of access to the commons. She may have those rights in principle, by virtue of her membership in a particular residence-based group, but fail to exercise them in practice because owing to the prevailing gender division of labour, or the ideology of seclusion among women of her caste, she is unable to move about publicly to take the cow to pasture. Alternatively, she may find her rights of access to common grazing are not translated into nourishment for the cow, because other, more powerful actors (e.g. a

(Harvey 1979: 178). As Harvey makes clear, resources can only be defined in relational terms, and are a function of a knowledge and technology within a given cultural context.

⁷ We are grateful to Stephen Devereux for suggesting this generic example.

politically well-connected farmer) have encroached on and enclosed a portion of the commons for crop production, thus reducing the availability of forage.

It will be seen from this example that the phrase 'legitimate, effective command' refers to many dimensions of entitlement mapping which are far from simple. The central difference between endowments and entitlements, following Gasper (1993), is that endowments are the rights and resources social actors have in principle, while the entitlements derived from them are what social actors actually get in practice. An emphasis on the 'effectiveness' or otherwise of command over resources highlights two issues. First, resource claims are often contested, and within existing power relations some actors' claims are likely to prevail over those of others. Second, certain social actors may not be able to mobilise some endowments (e.g. capital, labour) that are necessary in order to make effective use of others (e.g. land). For instance, kinship-based institutions that regulate command over labour may embody power relations structured around gender and age, that leave young men, and especially young women, strongly disadvantaged in their ability to control their own labour and to call on that of others.

By 'legitimate' we refer not only to command sanctioned by a statutory system but also to command sanctioned by customary rights of access, use or control, and other social norms. In some cases, these sources of legitimacy might conflict, and different actors may espouse different views of the legitimacy or otherwise of a given activity. In the example given above, the well-connected farmer and the female herder may call on different but, in their eyes, equally valid sources of legitimacy to justify their respective claims to the same resource, but the female herder is prevented by her weak position within prevailing power relations from realising her claim. In our South Africa case study, communities surrounding Mkambati Nature Reserve, a government-owned protected area on the Eastern Cape's Wild Coast, are legally prevented from hunting game within the reserve. Nevertheless, groups of young men, with active encouragement from local civic organisations and/or the tacit blessing of their local chief, depending on his current political stance *vis-à-vis* the local authorities, regularly hunt within the reserve. They justify their actions by calling on customary rights locally referred to as *ukujola*, which are based on historical claims predating the gazetting of the protected area, and which amount to legitimised poaching.⁸

Figure 1 links together in diagrammatic form those elements of our environmental entitlements framework discussed so far. An undifferentiated 'environment' has been replaced by one that is disaggregated into particular environmental goods and services. Their distribution, quality and quantity are influenced by ecological dynamics (see section 4 above) which are in part shaped by human action (discussed in section 7 below). The relationship between a given 'community', made up of differentiated social actors (see section 3 above), and the changing ecological landscape, can be analysed in terms of the ways different social actors gain capabilities, or a sense of wellbeing, by

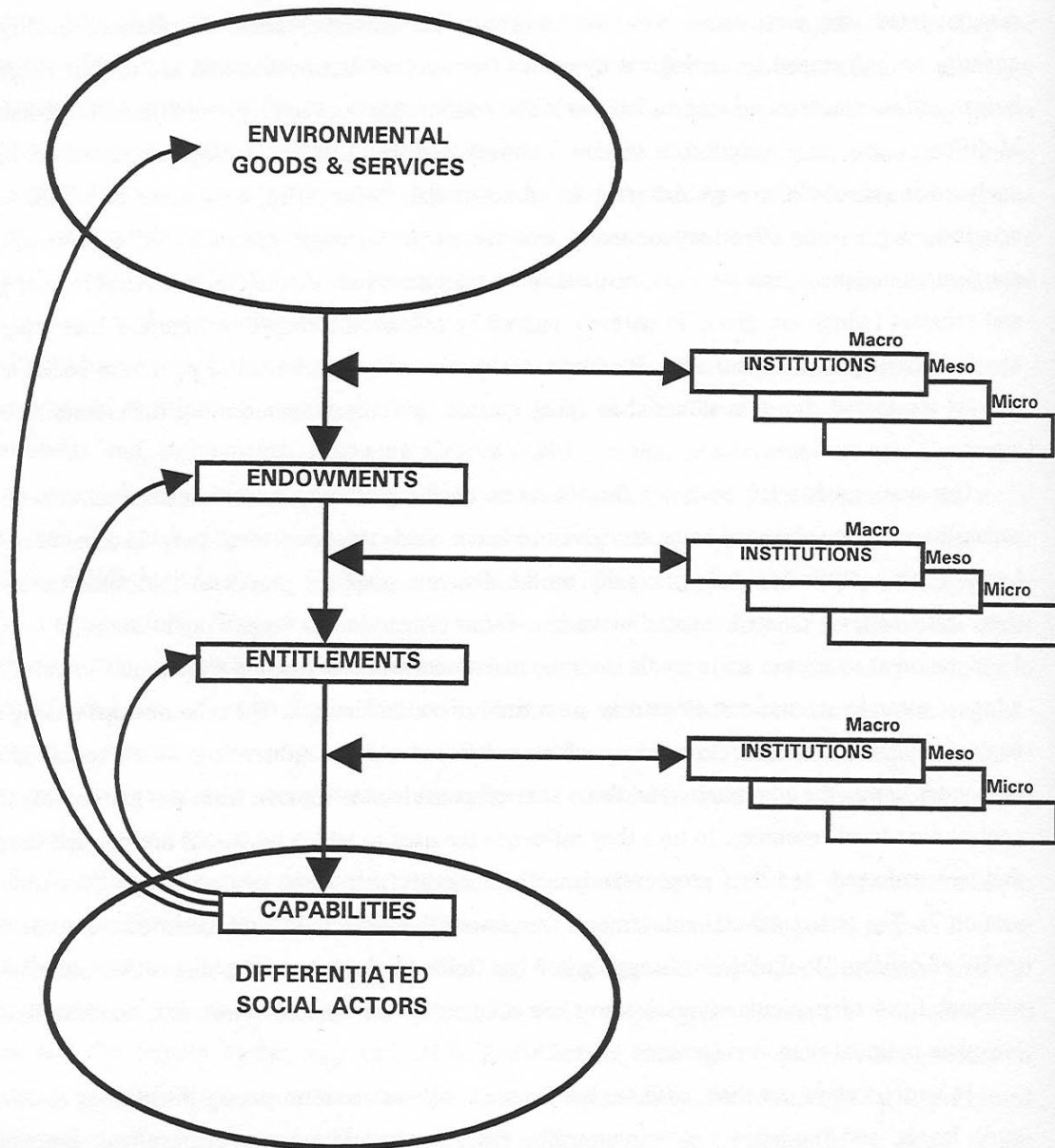
⁸ Jenkins (1997) includes a very useful discussion on questions of illegality and enforceability in the context of entitlement mapping processes, where forms of legitimacy for contested resource claims come into conflict with one another. For our purposes, we maintain the practical distinction that while endowments may include various formal and informal rights over resources that social actors have in principle, entitlements refer to the sets of utilities they are able to derive in practice.

acquiring legitimate, effective command over resources through processes of endowment and entitlement mapping. Endowments for particular social actors are distinct from environmental goods and services (which are given 'in nature'), and so lie outside the ellipse in Figure 1 that represents environmental goods and services. By contrast, capabilities are attributes of particular social actors, and so are included within rather than lying outside the ellipse representing differentiated social actors.

Our analysis has led us away from a focus on the particular endowments, entitlements and capabilities of a given social actor at a given moment, since these represent only a snapshot in time. Instead, our analysis focuses principally on the dynamic mapping processes that underlie each of these static sets, which are mediated by various forms of institutions (appearing to the right of Figure 1) operating at a range of scale levels from the macro to the micro. Section 6 examines in more detail what we mean by institutions, since they are central to our framework. The relationships among these institutions and between scale levels is of central importance in influencing which social actors – both those within the community and those at some considerable remove from it – gain access to and control over local resources. In turn they influence the uses to which resources are put and the ways they are managed, and thus progressively help to modify and shape the landscape over time (see section 7). The environmental entitlements framework therefore links both the macro and the micro levels of concern. It situates 'a disaggregated (or "micro") analysis of the distinctive positions and vulnerabilities of particular [social actors] in relation to the "macro" structural conditions of the prevalent political economy' (Jenkins 1997: 2).

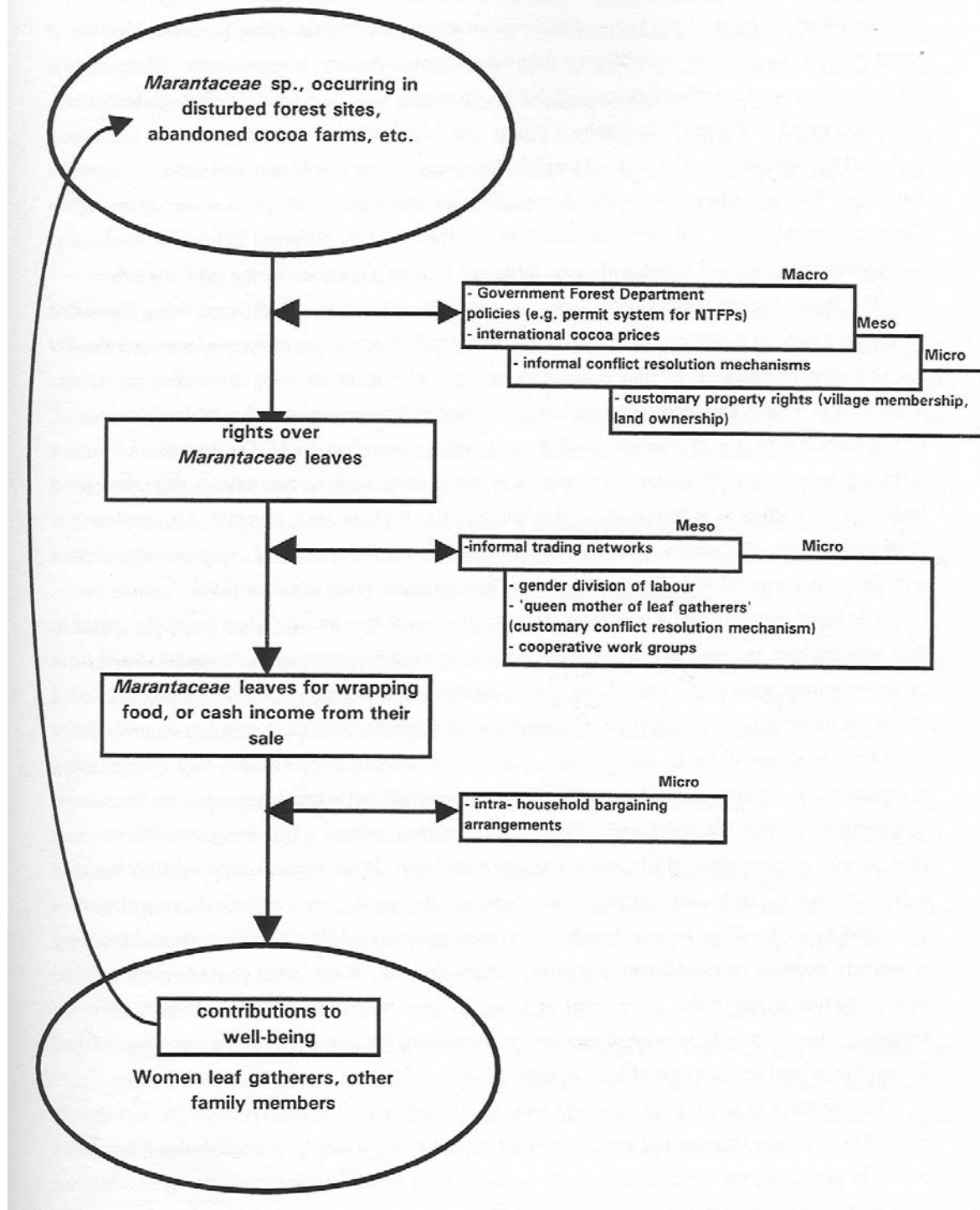
In various ways our three case studies illustrate the interactions among institutions at different scale levels, and the ways they circumscribe the resource claims and management practices of different social actors. At the international level, for example, the policies of donor agencies play an important role not only in directly shaping local approaches to community-based natural resource management, but also in influencing domestic macroeconomic policy or governance in ways that cascade down to affect local natural resource management. At national or state level, government policies and legislation are of primary interest, including land tenure reform policies, or approaches to forestry and wildlife conservation and tourism. At progressively more local levels these intersect with rural livelihood systems, intra-household dynamics, and so on. But the interrelationships between scale levels are far from deterministic. Land claims at local level may spill over into national, state or provincial-level politics, for example, and influence the direction of future policy and the scope of legally enforceable rights.

Figure 1: The environmental entitlements framework



To illustrate some of the types of endowment and entitlement mapping processes that are of interest in our case studies, consider the following, simplified example from Ghana. The particular sets of endowments, entitlements and capabilities discussed, and the relevant mediating institutions, are summarised in Figure 2. In southern Ghana, the leaves of *Marantaceae* plants are commonly collected by women and used and sold widely for wrapping food, kola nuts and other products (cf Falconer 1990; Agyemang 1996). The leaves are associated with particular sites and times within dynamic, variable forest and forest-savanna ecology. These include disturbed forest sites, moderately burnt forest, swamps, and abandoned cocoa farms and fallows, especially during the rainy season.

Figure 2: Endowments- and entitlements-mapping in the case of *Marantaceae* leaf collection, southern Ghana



The leaves become endowments – people gain rights over them – in different ways depending on whether they lie inside or outside government-reserved forest. Off reserve, the leaves are usually the common property of a village, with an actor's endowment mapping depending on village membership.

Where they occur on farmland, collection rights are acquired through membership of, or negotiation with, the appropriate landholding family or farm household. On reserve, endowment mapping depends on the Forest Department's permit system, with women often using established trading relationships as a source of finance for permits. Without such a permit, leaf gathering is illegitimate from the state's perspective, although it may be sanctioned by customary tenure arrangements grounded in different definitions of reserved land as ancestral farmland.

The set of entitlements derived from *Marantaceae* leaves may include direct use of the leaves or their sale for cash income. In practice, most women involved in gathering leaves prefer to sell them as an important source of seasonal income. In entitlements mapping, both labour and marketing issues are important. Women may have to negotiate with their husbands and co-wives – in relation to other farm work and domestic duties – for labour time to collect the leaves. They find leaf gathering in groups more effective, so collection depends on membership of a regular group or on impromptu arrangements among kin and friends. There is frequently competition between groups for the best sites, as well as competition for leaves among group members. When disputes arise, whether between individual women, collection groups, or with forestry officials, a 'queen mother of leaf gatherers' – appointed by each village or neighbourhood's women gatherers – helps to mediate them. Marketing effectively depends on establishing a regular relationship with village-based or visiting traders who will guarantee a reasonable price even at times of year when the market is flooded. Women frequently invest actively in maintaining such relationships, for instance collecting one type of leaf for one buyer, and another type of leaf for another buyer.

The utilities derived from the cash sale of *Marantaceae* leaves contribute to a woman's capability to ensure that she and her children are well-fed and to satisfy other cash-dependent basic needs. In particular, the leaves offer a timely source of rainy season income when money is otherwise scarce. But whether a woman can keep control of the income, and how it is used, depends on intra-household bargaining arrangements, such as negotiations with husbands and co-wives over expenditure priorities and responsibilities for providing food.

Asking which combination of institutions makes the most difference to resource access and control for a set of social actors, or for the dynamics of resource use and management surrounding a particularly valued element of the landscape, may offer innovative practical insights. These are often overlooked in simplified analyses of people–environment interactions, which tend to concentrate on questions of per capita resource availability and ignore issues around different social actors' resource access. Exploring the institutional dimensions of resource use opens up a range of important issues for management and policy which are not addressed as part of conventional analyses based on resource availability alone.

For example, in the Indian case study of a watershed development project, the NGO Seva Mandir had been working in the seven hamlets that make up the focal 'community' for at least eight years before it attempted any activities related to natural-resource management. In the earlier phase of its involvement in Nayakheda, Seva Mandir focused attention on adult literacy, maternal and child health

care, leadership training and 'institutional strengthening', which principally referred to the creation of a village committee to oversee the implementation of project activities. These initiatives all aimed directly to build up capabilities among the relevant sets of social actors who benefited from these activities, to give them voice in local political struggles and, in time, to build 'social capital'.⁹ Although probably not intended at the time Seva Mandir began work in Nayakheda, since watershed development activities were not planned at that time, these investments in capabilities and social capital appear to have been instrumentally important in protecting and promoting the endowments and environmental entitlements of particular social actors. Thus, as illustrated by the feedback arrows in Figure 1, there may be potential for the enhanced capabilities of particular social actors to protect and promote both their endowments and their entitlements; this process might be accelerated by means of purposive action through projects and public policies.

An institutional focus also highlights relations of power in the mapping processes. Such issues are notably absent in Sen's analysis (Watts 1991), suggesting the need to examine the degree to which different people can influence decisions about endowments and entitlements (cf Appadurai 1984). An extended entitlements approach therefore sees entitlements as the outcome of negotiations among social actors, involving power relationships and debates over meaning (cf Gore 1993: 452), rather than as simply the result of fixed, moral rules encoded in law.

A further important addition to Sen's analysis offered by our institutional focus is the introduction of a dynamic, historical perspective, over different time scales. Mapping processes are not static; indeed the various elements of the framework as set out so far continuously change over time. In the process of actors gaining legitimate, effective command over a resource bundle, negotiations over labour or land may take place which in turn transform the nature of certain actors' land or labour rights. Over longer time frames, a process of commoditisation of certain resources might serve to increase the role of the market as a key institution in endowment and entitlement mapping. This dynamic and historical perspective therefore informs our interpretation of endowment and entitlement mapping processes and, in turn, our approach to the institutional analysis of environmental change, a subject to which we now turn.

6 Institutions

Since institutional arrangements shape the processes of endowment and entitlement mapping, the way we understand institutions and institutional change is central to our analytical framework. For example, several different kinds of both formal and informal institution emerged as being important in mediating access to and control over *Marantaceae* leaves in southern Ghana. Consider the case of property rights, which serve to allocate endowments to different individuals. On the one hand there are formal property rights, such as permits to gather non-timber forest products. These are issued by the Forest Department, legitimised by the state, and in principle could be defended in courts of law.

⁹ Ajay Mehta, Director of Seva Mandir, personal communication, Udaipur, August 1996.

On the other hand there are also informal or customary property rights, legitimised by social norms and codes of behaviour. These are legitimate in the eyes of those local resource claimants who regard government-reserved land as ancestral farmland, but illegitimate in the eyes of the state. Another informal institution, the authority vested in the queen mother of leaf gatherers, helps mediate in disputes between forestry officials and local resource claimants on forest-reserve land. The question of entitlement mapping, or who ultimately gets effective command over *Marantaceae* leaves, is influenced by the interplay of other formal and informal institutions, including the gender division of labour, cooperative work groups, and trading networks.

So, how should we conceptualise institutions as part of the environmental entitlements framework? Several key themes emerge from recent work on institutions across a range of disciplines, and here we attempt to clarify our position in relation to these. First, we need to consider how institutions are to be defined. Many analysts in the fields of new institutional economics, new economic history and public choice theory view institutions as rules (Bromley 1989; North 1990; Ostrom 1986). This helps to distinguish institutions from organisations. If institutions are 'the rules of the game in society' (North 1990: 3), then organisations may be thought of as the players, or 'groups of individuals bound together by some common purpose to achieve objectives' (North 1990: 5). Some argue that organisations, such as schools, NGOs and banks, exist only because there is a set of 'working rules' or underlying institutions that define and give those organisations meaning (Bromley 1989; Commons 1968). This view is contested, however. Certain organisational forms may persist long after the 'working rules' that may initially have given them meaning cease to be relevant (Powell and DiMaggio 1991). Many institutions have no single or direct organisational manifestation, including money, markets, marriage, and the law, yet may be critical in endowment and entitlement mapping processes. Viewing institutions merely as rules, however, raises other problems to which we return below.

In addition to a clarification of the institution–organisation distinction, perhaps the most enduring contribution of the new institutional economics is the focus on transaction costs as an important factor underlying institutional change. In this respect, while it may not offer a grand theory, the new institutional economics does yield insights that are useful in suggesting hypotheses to guide empirical research (Harriss *et al* 1995). For example, the high costs to the Rajasthan State Forest Department of overseeing and enforcing regulated access to state forest land in the Aravalli Hills in India has, it is argued, led to high levels of commercial exploitation and subsequent deforestation, suggesting that other types of institutional mechanism, with lower transaction costs, would be more appropriate if maintaining forest cover was a major objective. Similarly, in the former Transkei, South Africa, the type of tenure regime associated with different types of grazing can be related to the relative costs and benefits of managing exclusion. In high-value grazing sites, institutional forms with relatively high transaction costs may persist, while for low-value, highly variable grazing resources the opposite is most likely (cf Scoones forthcoming).

However, some definitions of institutions derived from a transaction costs approach can be criticised for being tautologous and functionalist. At the extreme, this results in definitions along the following lines, as paraphrased by Harriss *et al* (1995: 7): 'existing institutions minimise transaction costs because transaction cost minimisation is their function'. The definition of institutions adopted by de Janvry *et al* (1993: 566) – 'complexes of norms, rules and behaviors that serve a collective purpose' – is problematic on account of both its functionalism and the tendency to lump together norms, rules and behaviour. In order to move beyond such problems to a more complete understanding of the dynamics of institutional change and the changing patterns of endowment and entitlement mapping, we must distinguish between institutional 'rules' and people's behaviour or practices, and clarify the relationship between them. Different bodies of work on institutions take different positions on this issue.

Much new institutional economics, like earlier structural-functionalist anthropology, assumes that rules and behaviour are synonymous and can be reduced to one other (e.g. de Janvry *et al* 1993); a position we criticised in section 3 for denying people's conscious action and agency. Nevertheless, some of the work that defines institutions as rules recognises that such rules do not automatically determine people's behaviour. Ostrom (1986), for instance, argues that rules prescribe room for manoeuvre; behaviour is rule-bound rather than rule-determined. Others point to situations in which behaviour appears to contravene the rules. In an insightful critique of Sen's narrow view of the rules of entitlement, Gore (1993) refers to such behaviour as 'unruly' social practices, citing Thompson (1971); Scott (1976, 1985) and others on the ways that different forms of protest and resistance challenge legal rules governing people's ability to gain command over commodities. But such 'unruly' practices may well be bound by different sets of moral/informal rules (Gore 1993: 446). Such situations are those in which notions of legitimacy are contested, and therefore actual entitlements are influenced by the interplay of these competing rule sets in the context of prevailing power relations. Such an approach recognises that the law necessarily operates within a particular social context, whereby, for example, the judiciary is able to bend the rule of law to favour selective class, gender or ethnic interests, particularly in weak states.

The distinction between formal and informal institutions is highlighted by these analyses. Formal institutions may be thought of as rules that require exogenous enforcement by a third party organisation. The rule of law is an example, usually upheld by the state through such organisational means as law courts, prisons and so on. Informal institutions, however, may be endogenously enforced; they are upheld by mutual agreement among the social actors involved, or by relations of power and authority between them. Recent work on institutions stresses the socially 'embedded' nature of informal institutions, or the multiplicity of institutional relations in which people are engaged at any one time (Runge 1986; Mearns 1996b; Swallow 1996; White 1996). In short, institutions of various kinds, ranging from the informal (e.g. social norms) to the formal (e.g. the rule of law), interlock to form a matrix within which people live their lives.

As argued in the burgeoning literature on social capital, trust and networks of civic engagement (e.g. Gambetta 1988, Putnam *et al* 1993; Stewart 1996; Humphrey and Schmitz 1996; Mearns 1996c; Dasgupta 1996), multiple involvement may promote mutual assurance among social actors, promoting cooperation and collective action. Yet this argument potentially neglects issues of power relations and the very different meanings that different institutions may carry for different actors. As Bates (1995) has emphasised, there is a need to ground institutional analysis in a theory of power. While this is currently lacking in much new institutional economics (but see Bowles and Gintis [1993] for a notable exception in the economics literature), it is strongly present in other strands of work, for instance in feminist analysis of institutions (e.g. Kabeer and Subrahmanian 1996; Goetz 1996). Many institutions patently do not serve a collective purpose, even if they may once have done, and different actors' perceptions of the 'collective good' depend very much on their social position. Equally, involvement in some groups may be a response to inequities in others. A view of institutions as simply coexisting in benign complementarity may be misleading. Women's investment in resource-sharing networks with neighbours, for instance, may relate to their lack of power within the household.

Our analyses of institutions mediating environmental endowment and entitlement mapping processes within the case study settings leads us to view institutions not as the rules themselves, but as regularised patterns of behaviour that emerge from underlying structures or sets of 'rules in use'. While some new institutionalists adopt this perspective (e.g. Schotter 1981), it is more commonly associated with sociological and anthropological approaches (e.g. Giddens 1984). Such an approach blurs the distinction between rule and practice. Rather than existing as a fixed framework, 'rules' are constantly made and remade through people's practices. This is a perspective developed in anthropological literature on customary law (Chanock 1985), and in the work of Berry (1989, 1993) who sees institutions as maintained by (and only existing because of) people's active 'investment' in them. Regularised practices, performed over time, eventually constitute institutions. Yet, as they consciously monitor the consequences of past behaviour and the actions of others, different social actors may choose – or be forced – to act in irregular ways. Over time, perhaps as others similarly alter their behaviour, institutional change may occur. But owing to the embeddedness of informal institutions, institutional change in society may be a slow, 'path-dependent' (cf North 1990) process, even if formal institutions, such as legal frameworks, macroeconomic policies or political regimes, change quickly (Mearns 1996b).

In order to understand the range of formal and informal institutions that mediate processes of endowment and entitlement mapping, an understanding of 'rules in use' is therefore required, where different actors' regularised, everyday practices are central to any analysis. This necessitates an actor-oriented approach to understanding institutions (cf Long and van der Ploeg 1994; Nuijten 1992), one that takes seriously an analysis of difference and an appreciation of power relations. Our framework therefore seeks to investigate the embedded nature of formal and informal institutions, exploring institutional change in a historical perspective.

7 Structuration of the Environment

So far, the presentation of our framework has focused on how social actors access, use and benefit from different components of the environment, and how an extended entitlements approach, coupled with an analysis of institutions, helps to conceptualise these processes. But a key set of questions remains, concerning the ways in which the environment is, in turn, shaped and transformed through people's interactions with it (see the 'feedback loop' on the left in Figure 1). In debates around global environmental change, the degree to which particular landscapes have been shaped by their inhabitants as well as by processes operating at some remove is often underrecognised.

As we have argued, community-based sustainable development narratives tend to conceive of local environments in terms of a baseline 'natural balance' or optimum which human intervention disturbs or degrades over time, but may be called upon to restore. Our discussion of new thinking in ecology (section 4) criticised this perspective, arguing for a different view in which environments are constantly transforming and emerging as the outcome of dynamic and variable ecological processes and disturbance events, in constant interaction with human use. In other words, environmental conditions at any given time can be seen as the product of both ecological and social history. Sections 5 and 6 explained the social history of environmental use in terms of institutional dynamics which shape the changing ways that differentiated social actors perceive, use and manage components of the environment as resources. Some of the ideas in structuration theory, which we have already addressed in relation to social and institutional dynamics, add significantly to our understanding of people–environment interactions (cf. Redclift and Woodgate 1994).

Seen in this way, the environment provides a setting for social action but is also a product of such action. People's actions and practices, performed within certain institutional contexts, may serve to conserve or reproduce existing ecological features or processes (e.g. maintain a regular cycle of fallow growth or protect the existing state of a watershed and its hydrological functions). But people may also act as agents who transform environments (e.g. shorten the fallow, altering soils and vegetation, or plant trees in a watershed). Such agency may involve precipitating transitions of ecological state that push ecological processes in new directions or along new pathways. While some actions may be intentional, constituting directed management aimed at particular goals or transformations, others may be unintentional, yet still have significant ecological consequences.

Over time, the course of environmental change may be strongly influenced by particular conjunctures of institutional conditions, or by the coming together of contingent events and actions. Practices and actions carried out at one time – under one set of institutional arrangements – may leave a legacy that influences the resources available to become endowments for actors at some future time. For instance, the farming practices of one group of people may enduringly alter soil conditions such that subsequent inhabitants may make use of these in their farming of different crops, whether or not they acknowledge this as the legacy of past farmers. Equally, past actions influence the possibilities for agency open to subsequent actors. As present practices build on the legacies of past ones, so the causality of environmental change may need to be seen as cumulative, sequential or path-dependent.

The concept of landscape serves usefully to encompass these linked ecological and institutional dynamics, with landscape history referring to the reflexive relationship between environmental and social history. In this sense, our perspective articulates with a large literature that has explored the idea of landscape in cultural geography (e.g. Sauer 1925; Hoskins 1955; Glacken 1967; Cosgrove 1984; Duncan and Ley 1993) and in social anthropology (e.g. Bender 1993; Guyer and Richards 1996). Considering how regional, national or international processes articulate with local ones to shape landscapes over an historical time frame is also a shared feature of approaches in what has come to be termed political ecology (e.g. Blaikie and Brookfield 1987; Bassett 1988; Bryant 1992; Moore 1993; Peet and Watts 1996). However, with some exceptions (e.g. Rocheleau *et al* 1996) these have given rather less attention to issues of intra-community social difference. Equally, they have paid rather little attention to recent theoretical perspectives in ecology (but see Fairhead and Leach 1996; Zimmerer 1994). Landscapes, over time, then, may come to embody layer upon layer of the legacies of former institutional arrangements, and of the changing environmental entitlements of socially differentiated actors.

This can be illustrated for the Ghana and South Africa case studies by the resource- and biodiversity-rich forest patches that are distinctive features of both landscapes (see Fairhead and Leach 1996 for other cases). Contrary to strong narratives suggesting a decline in forest cover, it seems that over the twentieth century tree cover has increased on specific sites within the settled landscapes of both the South African and Ghanaian case study areas. Shifts from grassland to wooded area have resulted from diverse interactions over time between social actors and ecological processes, influenced by institutions. Around settlement sites, for instance, tree growth has been encouraged by localised improvements in soil fertility resulting from inhabitants' everyday activities (gardening, waste deposition etcetera), by livestock management practices and by fire protection regimes such as early-burning. The form and composition of such woodland patches has been influenced by management for tree crops (e.g. cocoa in the Ghana case), and by enrichment planting with indigenous and exotic species valued by particular social actors. Such management patterns have altered over time in response to changing market opportunities, labour relations and different social actors' priorities. Frequently, forest patches have endured even when settlements have been abandoned, for instance as a result of migration or settlement consolidation, and at least in the Ghana case they are sometimes actively preserved as burial and ancestral worship sites by the descendants of settlement founders. Understanding such changes in vegetation therefore requires insights into institutions influencing settlement patterns, labour organisation, fire and grazing management, tree product marketing and so on, and into the ecological legacies left by actions under each set of institutional arrangements for people's subsequent resource use and management.

8 Conclusions

In focusing attention on the mapping processes by which components of heterogeneous environments become endowments and entitlements of particular social actors, the framework outlined in this paper

has attempted to provide a dynamic perspective on the role of institutions in people–environment relations. Diverse institutions, both formal and informal, and often acting in combination, shape the ways in which differentiated actors access, use and derive wellbeing from environmental resources and services and, in so doing, influence the course of ecological change. As people interact with each other and with the environment in the context of these mapping processes, their actions may, over time, serve to reproduce particular institutions, but they may also serve to alter them, and thus to push institutionally influenced ecological dynamics along new pathways.

By seeing people–environment relations in this way, the environmental entitlements framework offers some fundamental challenges to the ways in which 'community', 'environment' and the links between them are commonly portrayed in the policy narratives surrounding community-based sustainable development. In so doing, it raises a number of implications for development planning and practice. By highlighting those institutional arrangements that support particular endowments and entitlements, the framework can help target particular institutions for external support, as a corrective to the current, narrow emphasis on community-level organisations. In particular, the entitlements approach can help to reveal institutional arrangements – including those of an informal nature – that are of central importance to the wellbeing of those social groups often marginalised by so-called community-level interventions. The framework also can help highlight which events, contingencies and institutional combinations contribute to particular types of ecological transformation, thus assisting a more focused approach to planned interventions intended to influence the course of environmental change.

While much of our analysis has addressed local-level institutional dynamics, power relations and the like among sets of social actors that make up local communities, this does not mean that it is only at the local level that appropriate forms of external intervention may be targeted. On the contrary, it is often the interaction of macro- and micro-level institutions that influences the entitlement mappings of particular social actors, or particular trajectories of environmental change. A valid criticism of many current approaches to community-based sustainable development is that they are heavily project-focused, and may not be generalisable. While an understanding of institutional dynamics requires detailed analysis at local level, more effective forms of public intervention are likely to require attention to policy frameworks rather than to individual projects. Through the comparative analysis of carefully selected, representative case studies, and by drawing attention to the ways micro and macro institutional variables interact, the environmental entitlements framework could inform a view of where policy initiatives are likely to yield most promising results, provided the objectives for public intervention are clearly specified at the outset. On the other hand, the framework may also prove useful to those interested in social impact evaluation of particular projects or discrete policy initiatives. Our India case study is an example of just such an application of the framework.

More broadly, and as illustrated here for our three case study areas, the framework emphasises the importance of social difference and of ecological variability and dynamics in people–environment relations, and of the history of these relations in shaping current and future possibilities. Difference,

dynamics and history are frequently ignored in development analysis and planning, yet, we would argue, should be brought much more forcefully to the fore. From this perspective, it becomes difficult, if not impossible, to identify an 'environmental ideal' to which community-based sustainable development should aspire: a more natural vegetation, for instance, or a more productive watershed, defined only in aggregate terms. Instead, the focus shifts to recognise that different groups of actors may give priority to different environmental resources or services, and that particular trajectories of landscape change will bring a different distribution of costs and benefits to different groups of people. In this context, collective choice and consensus, as emphasised in current approaches to community-based sustainable development, come to seem illusory goals. Landscape change is a fundamentally political process, involving negotiation and conflicts between actors with different priorities who are differently positioned in relations of power. Development interventions that seek to influence environments similarly need to take an approach in which plural perspectives are rendered explicit and outcomes are negotiated through processes that may well be prone to conflict.

This may seem an uncomfortable conclusion to reach. However, making more explicit the political nature of landscape change and the varying environmental priorities of different social actors need not create a vacuum for public policy and action. The environmental entitlements framework is offered first as an aid to understanding, to be used descriptively. Given carefully specified objectives, it may then be applied normatively. While this may appear rather top-down, in that it seems to imply that policy makers can and should judge between 'good' and 'bad' institutions, current approaches to community-based sustainable development may also reinforce socially or even ecologically undesirable outcomes by operating under false assumptions. Perhaps the most important conclusion is that much more broadly based citizen participation in processes of environmental problem-framing in the first place, and thereby in defining and negotiating particular solutions (Gaventa 1995; Renn *et al* 1994), is more likely to lead to processes worthy of the epithet 'sustainable development'.

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