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The Multiple Dimensions of Sustainable Development

Michael Redclift

ABSTRACT: The problem with referring to 'sustainable development' is that its very appeal is its vagueness. Sustainable development means different things to different people: ecologists, environmental planners, economists and activists. Part of the interest in the discussion of sustainable development lies in the way the concept has been borrowed from both the natural and social sciences. This paper examines the contribution that a broadly-based concept of sustainable development can make: focusing attention on poor peoples' use of sustainability in seeking livelihoods from resource-poor areas of the South.

Sustainable development

The problem with referring to 'sustainable development' is that, like so many words in the development lexicon, its very strength is its vagueness: 'sustainable development' means different things to different people

One point of departure is to define what Barbier (1989) refers to as *sustainable economic development*. This refers to the optimal level of interaction between three systems – the biological, the economic and the social – a level which is achieved "through a dynamic and adaptive process of trade-offs" (Barbier, 1989 p. 185). Economists, notably David Pearce, continue to emphasise the trade-off between systems or between present and future needs, as the key issue (Pearce, 1986). In similar terms it is argued that "sustainable economic development involves maximising the net benefits of economic development, subject to maintaining the services and quality of natural resources over time" (Pearce *et al.*, 1987). For economists interested in the environment, then, issues like environmental accounting, which aim to give a numerical value to environmental losses and costs, are essential instruments in seeking to achieve greater sustainability.

Of immediate contrast is what Barbier sees as a much less narrowly defined concept of *sustainable development*. This is expressed in the Brundtland Commission's phrase "development which meets the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland, 1987, p. 43). *Our Common Future* placed the emphasis in sustainable development on human needs rather than the trade-offs between economic and biological systems, an approach which many economists would have difficulty in endorsing. Brundtland mapped a very political agenda, arguing that "sustainable development is a process in which the exploitation of resources, the direction of investments, the orientation of technological development and institutional change are all in harmony, and enhance both current and future potential to meet human needs and aspirations" (Brundtland, 1987, p. 46). The important thing to

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notice about this approach is that it regards sustainable development as a policy objective, rather than a methodology. It is an over-arching concept, a highly desirable end-point of development aspirations. Such an approach is unapologetically normative, and places both the responsibility for problems, and the political will to overcome them, in the hands of human actors.

An even more 'human-focused' approach is provided by Robert Chambers, in his concept of *sustainable livelihoods*. Chambers served on the Advisory Panel on Food Security, which fed into the Brundtland Commission's final report. He argues that:

sustainable livelihood security is an integrating concept. livelihood is defined as adequate stocks and flows of food and cash to meet basic needs. Security refers to secure ownership of, and access to, resources and income-earning activities, including reserves and assets to offset risk, ease shocks and meet contingencies. Sustainable refers to the maintenance or enhancement of resource productivity on a long-term basis (Chambers, 1988).

Part of the interest in the discussion of sustainable development is in the way the concept has borrowed from both the natural and social sciences. Chambers' definition, which places the emphasis on poor people coping with stress, is a case in point. Gordon Conway, in a series of very influential papers, argued that "sustainability (is) the ability to maintain productivity, whether of a field, farm or nation, in the face of stress or shock" (Conway and Barbier, 1988, p. 653). Originally, Conway had been thinking primarily in ecological terms about the ability of natural systems to cope with system disturbance, but this led him (through a broader commitment to people rather than things) to seek to define a concept which retained the idea of system disturbance, but added that of human beings as self-conscious actors in the development process. Other writers, such as Bartelmus, an environmental planner, have defined sustainable development more in terms of conserving stocks of what we might term 'natural capital', in contrast to the traditional economic view that resources and the environment were chiefly important as ways of generating income, or flows:

(sustainable development) is development that maintains a particular level of income by conserving the sources of that income: the stock of produced and national capital (Bartelmus, 1987, p. 12).

This does not exhaust the possibilities for defining 'sustainable development' but it does point to a number of significant areas of both convergence and divergence:

- (a) There is little agreement about what needs to be sustained – present or future population levels?
- (b) Does this population need to be sustained in terms of its minimum (perceived?) needs, at a particular level of consumption? Or does this level of needs/consumption require changing?
- (c) There are different 'levels' at which sustainability is important eg. the farm level, the field level and the village level in Conway's agro-ecological analysis, (or the level of the village, region and nation, according to other accounts). These distinctions are important because what is sustainable at one level may not be sustainable at another (and vice versa). An example is that of the Santa Cruz area in Eastern Bolivia, where farming systems are 'sustainable' in agro-ecological terms, but the existence of important contraband trafficking, and a buoyant market for coca leaves, the raw material for cocaine, serve to undermine these systems (Redclift, 1986).
- (d) Some writers refer to sustaining levels of production, and others to levels of consumption. Again, this is important since it can be argued that what makes development unsustainable at the global level are the patterns of consumption in the rich countries, while most efforts to tackle development problems are essentially production-orientated.

Sustainable development, then, is about meeting human needs, or maintaining economic growth or conserving natural capital, or about all three.

The absence of political economy

It will be clear from what has been written above that there is no consensus about sustainable development, and that differences reflect disciplinary biases, distinctive paradigms and ideological disputes. In my view (Redclift, 1987) there are at least two sets of contradictions which soon become evident when sustainable development is discussed.

Firstly, embedded in much of the 'sustainability' thinking is an important difference of emphasis. Some writers view sustainability as a serious issue because nature is a major constraint on further human progress. They are concerned, basically, with the price paid by the conventional growth model if the warnings we receive from the environment, the 'biospheric imperatives', are ignored. The solution, is either to develop technologies which avoid the most dire environmental consequences of development, or to take measures to assess environmental losses in a more realistic way, thus reducing the danger that they will be overlooked by policymakers.

Other writers take a rather different view. For them the principal problem is that 'human progress' carries implications for nature itself, and should cause us to re-examine the 'ends' of development, as well as the means. This view is shared by a variety of people: radical ecologists (Gorz, 1980; Bahro, 1982; Ryle, 1988), eco-feminists (Merchant, 1980) and deep ecologists (Devall and Sessions, 1985). For writers of these different ideological persuasions finding technical solutions to environmental problems, including ways of costing environmental losses such as those advocated by Pearce and colleagues, is ultimately self-defeating.

Secondly, considering 'sustainable development' within a North/South framework requires attention to the contradictions imposed by the structural inequalities of the global system (Brundtland, 1987; Redclift, 1987). Green concerns in the North, such as alternatives to work and ways of making work more rewarding, can often be inverted in the South, where the environment is contested not because it is valued in itself, but because its destruction creates value. In the South struggles over the environment are usually about basic needs, strategies to survive, rather than 'lifestyles', and the cost to the individual of pursuing individual self-interest is often carried by the group or collectivity (the basis of the "tragedy of commons" argument). There is no point in appealing, under these circumstances, to idealism or altruism to protect the environment, when the individual and household are forced to behave 'selfishly' in their struggle to survive.

In Chapter Three of *Blueprint for a Green Economy* Pearce *et al.* (1989) argue from a declared interest in environmental quality that environmental improvements are equivalent to economic improvements "if (they) increase social satisfaction or welfare.". Their resolve is to demonstrate to economists that there are economic costs in ignoring the environment. This is the first position I outlined above, and the position which is growing in influence within international development agencies, such as the World Bank, the United Nations agencies and the Overseas Development Administration (ODA). It has become, within a short space of time, almost synonymous with environmental management in many people's estimation.

One of the problems with this position is that it works better for developed than for developing countries. As the Tables in Chapter Three of *Blueprint* demonstrate, there is widespread popular concern about the environment in the developed countries, where environmental quality is often placed before economic growth in surveys of public opinion. In their work most neo-classical economists use the "willingness to pay" principle (Pearce *et al.*, 1989, p. 55) as a means of assessing environmental costs and benefits. Pearce argues that the emphasis in environmental policy should be shifted towards this principle to avoid future, anticipated damage to the environment. It is easy to appreciate some of the difficulties when we consider developing countries. In developing countries the creation of value is linked to sacrificing environmental quality rather than improving environmental quality, because the cumulative effects of economic growth on the poor are so often negative. In an area of tropical forest (Choco), currently a Biosphere Reserve on the Colombian coast, which I visited with officials from the Colombian Environmental Agency (INDERENA) in October 1988, men involved in (illegal) forestry operations whom we met, were being paid \$10 (US) a cubic metre for cutting hardwoods. The forested area lies adjacent to the Pacific Ocean, and illegal forestry operations meant that people

were, literally, risking their lives to cut this wood. This involved taking a small boat into dangerous coastal waters to find suitable forest, and 'catching the tide' by navigating the Pacific Ocean for five hours at a time before returning to the port of Buenaventura. If one man did not cut the wood others would cut it. The implications of these facts are important for the methods we use to assess environmental costs. In this case the revaluation of tropical forest, to include the environmental costs of unsustainable activities, would do little to prevent forest destruction, although it might highlight the scale of the problem. Colombia's foreign debt enables transnational companies like Carton de Colombia, which bought the hardwoods in the Choco, to pose as national saviours, rather than national vandals. (This corporation was active in sponsoring environmental meetings!). There are also reasons for refusing to overlook the highly unequal context of landholding which forces poor men and women to colonise the tropical forests, and other untitled land. In situations like that of tropical Colombia we need to specify greater equity, or the reduction of poverty, as a primary objective, before the question of environmental poverty can be fully addressed.

Equity considerations, in this context, are not a minor element in total utility, as Pearce et al. suggest (1989, p. 48) but the driving force behind indiscriminate resource degradation. The discussion of sustainable development should not be confined to an assessment of environmental and economic trade-offs, for to do so implies ignoring other essential points of reference, including the regional and national political economy of resource use. It also tacitly endorses a highly ethnocentric, and North-biased, view of the development process. It fails to take seriously the integrity of other cultures, and their view of sustainability.

The multiple dimensions of sustainable development

To establish an adequate conceptual framework within which to explore the idea of sustainable development we need therefore to identify the multiple dimensions of the concept. There are three dimensions which require our urgent attention: the economic, the political, and the epistemological dimensions.

i. The economic dimension

As we saw in the discussion of environmental accounting, much of the economic argument has been conducted at the level of present and future anticipated demand, assessing the costs in foregone economic growth of closer attention to environmental factors. It was John Stuart Mill, in his *Principles of Political Economy* (1873), who emphasised the idea that we need to preserve Nature from unfettered growth, if we are to preserve human welfare before diminishing returns begin to set in. With hindsight we can appreciate the full significance of Mill's observations.

This tradition, which we would identify today as part of the alternative, sustainable tradition of thought, was largely opposed to the views of most orthodox economists, who either followed Malthus or, later, Ricardo. The Malthusian tradition emphasised the importance of the ratio of population to natural resources, and has given rise to a 'population ethic', espoused by Neo-Malthusians like Garret Hardin (1968). In contrast, the Ricardian tradition, which has been at the centre of economics this century, took a much more 'optimistic' view of the relationship between economic growth, population and resources. The optimistic Ricardian view was that, following the promethean spirit, human ingenuity and the advances of science were capable of 'putting back' the day of judgment, when population would begin to overtake resources. This optimism was shaken, but not essentially destroyed, by the publication of *Limits to Growth* in the early 1970's (Meadows et al., 1972).

ii. The political dimension

The political dimension of sustainability comprises two separate, but related, elements: the weight to be attached to human agency and social structure, respectively, in determining the political processes through which the environment is managed; and the relationship between knowledge and power in popular resistance to dominant world views of the environment and resources. In

both cases it is useful to draw on a body of emerging social theory, which has evolved and gained currency while environmentalism has risen to prominence.

The problem of human agency in relation to the environment is well recognised in the literature, especially by geographers (O'Riordan, 1989). It is also a central concern of sociologists, although rarely linked to environmental concerns *per se*. The British sociologist Anthony Giddens has devoted considerable attention to what he describes as a theory of 'structuration', which would enable us to recognise the role of human beings within a broad structural context, in seeking to advance their own, or group, interests. He notes that "...human agents..have as an inherent aspect of what they do, the capacity to understand what they do while they do it." (Giddens, 1984,xxii). It is their knowledgeability as agents which is important. Although Giddens does not apply his ideas specifically to environmental questions, they have clear utility for any consideration of the political and social dimensions of sustainability.

An examination of the way power is contested helps us to explain human agency in the management of the environment, as well as the material basis of environmental conflicts. In this sense it is useful to distinguish between the way human agents dominate nature – what we can term "allocative resources" (Giddens, 1984, p. 373) and the domination of some human agents by others – "authoritative resources" in Giddens' phrase. Environmental management, and conflicts over the environment, are about both processes: the way groups of people dominate each other, as well as the way they seek to dominate Nature. Not surprisingly, the development, or continuation, of more sustainable livelihood strategies carries important implications for the way power is understood between groups of people, as well as for the environment itself. The Green agenda is not simply about the environment *outside* human control; it is about the implications for social relations of bringing the environment *within* human control.

The second question of importance in considering the political dimension of sustainability, is the relationship between knowledge and power, a dimension often overlooked by observers from developed countries when they turn their attention to poorer societies. As we shall see in a moment, the consideration of epistemology in sustainable development carries important implications for our analysis, since it strikes at the cultural roots of quite different traditions of knowledge. It is also important to emphasise, however, that knowledge and power are linked, as Foucault observed in much of his work (Smart, 1985; Sheridan, 1980). We can, following Foucault, distinguish three *fields of resistance* to the universalising effects of modern society, and these fields of resistance are particularly useful in delineating popular responses, by the rural poor in particular, to outside interventions designed to manage the environment in different ways.

The first type of resistance is based on opposition to, or marginalisation from, production relations in rural societies. This is resistance against *exploitation*, in Foucault's terms, and includes attempts by peasants, pastoralists and others to resist new forms of economic domination, which they are unable to control or negotiate with.

The second form of resistance is based on ethnic and gender categories, and seeks to remove the individual from *domination* by more powerful groups, whose ethnic and gender identity has conferred on them a superior political position. In many cases the only strategy open to groups of people whose environmental practices are threatened by outsiders, and whose own knowledge, power and identity is closely linked with these practices, is to seek to distance themselves from 'outsiders' by, for example, reinforcing ethnic boundaries between themselves and others.

Finally, poor rural people frequently resist *subjection* to a world view which they cannot endorse, in much the same way as people in developed countries often confront 'totalising' theories, such as psychoanalysis or Marxism. In developing countries the development professionals frequently have recourse to a body of techniques for intervening in the natural environment, which are largely derived from developed countries' experience: 'environmental managerialism' is one way of expressing these techniques. The refusal to be subordinated to a world view dominated by essentially alien values and assumptions marks what Foucault terms "resistance against subjection". In no way is it implied that resistance can be equated with political struggle, whatever the basis of the resistance itself. Frequently people who are relatively powerless, because their knowledge-systems are devalued, or because they do not wield economic

power, resist in ways which look like passivity: they keep their own counsel, they appear respectful towards powerful outsiders, they simply fail to cooperate.

iii. *The epistemological dimension*

Sustainable development is usually discussed without reference to epistemological issues (ie. those concerned with ways of acquiring knowledge and their integration into conceptual systems). It is assumed that 'our' system of acquiring knowledge in the North, through the application of scientific principles, is a universal epistemology. Anything less than scientific knowledge hardly deserves our attention. Such a view, rooted as it is in ignorance of the way we ourselves think, as well as other cultures' epistemology, is less than fruitful. Goonatilake (1984) reminds us that large-order cognitive maps are not confined to Western science, and that in Asia, for example, systems of religious belief have often had fewer problems in confronting 'scientific' reasoning than has the Judaeo-Christian tradition. The ubiquitousness of Western science, however, has led to traditional knowledge becoming fragmented knowledge in the South today, increasingly divorced from that of the dominant scientific paradigm. This observation echoes contemporary Green thinking, too: in his conversation with Capra, Schumacher noted that "...because of the smallness and patchiness of our knowledge, we have to go in small steps. We have to leave room for non-knowledge.." (Capra, 1988, p. 230).

The philosopher Feyerabend, in his influential book *Farewell to Reason*, has distinguished between two different traditions of thought, which can usefully be compared with 'scientific' and 'traditional' knowledge. The first tradition, which corresponds closely to scientific epistemology, he calls the *abstract* tradition. This enables us "...to formulate statements (which are) subjected to certain rules (of logic, testing and argument) and events affect the statements only in accordance with the rules..it is possible to make scientific statements without having met a single one of the objects described.." (Feyerabend, 1987, p. 294). He gives as examples of this kind of tradition, elementary particle physics, behavioural psychology and molecular biology. In contrast, the kinds of knowledge possessed by small-scale societies, in particular, Feyerabend would label as *historical* traditions. In these epistemological traditions "...the objects already have a language of their own" – the object of enquiry is to understand this language. In the course of time much of the knowledge possessed by people outside mainstream science, especially in developing countries, becomes encoded, in rituals, in religious observations and in the cultural practices of everyday life. In societies which make an easy separation between 'culture' and 'science' such practices can easily be ignored, although they are frequently the key to the way environmental knowledge is used in small-scale rural societies.

Conclusion

This paper has sought to extend our definition of sustainable development by enlarging the compass of debate, and considering the dimensions of sustainability which usually lie outside the parameters of most Northern environmental policy intervention. As such it represents little more than a small beginning, although there is evidence that more urgency is currently being given to the links between environmental knowledge, political processes and the management of resources (McNeely and Pitt, 1985; IUCN 1990; Norgaard, 1985). We have seen that the environmental discourse being promoted by development agencies today does represent an improvement on the past, but at the same time fails to take adequate account of both international (structural) and cross-cultural factors in sustainable development. By enlarging the discussion it is hoped that we can begin to get at the texture of "actually existing" sustainable practices, and thus to make more qualified decisions about the direction that future policy should take.

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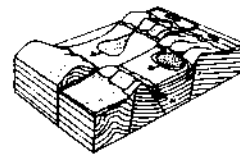
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