

Chapter 2

Conceptualisation: Understanding Land Degradation

Degradation is not an absolute term, but dependent on use. It is rather a perceptual term with multiple users, and it is open to multiple interpretations (Blaikie and Brookfield 1987). There are about seventy definitions currently in use, which is confusing for everyone (Jones 1995). This has therefore been the subject of research throughout the world (FAO 1991).

Many argue that scientific analysis alone cannot be expected to present a consistent picture of the extent of land degradation. Lal *et al.* (1989), for example, argue that there is no reliable database or precise criteria for assessing land degradation. Similarly, Carpenter (1989) revealed that there is a lack of statistical reliability pervading the studies of field measurements such as soil erosion rates, nutrient transport, and productivity of vegetation. Therefore, rather than exclusively concentrating on presenting more scientific data, which also have only partial views of our world, it is useful that views on the construction of the problem of land degradation by various actors, such

as local people, policy-makers, resource managers, and researchers, are noted.

Nepal has become a paradigmatic experimental ground for forest and land degradation. A number of different studies have also been conducted (see, for example, Eckholm 1975, 1976; McFarlane 1976; Banskota 1979; Wallace 1981, 1988; Bajracharya 1983; Thomson *et al.* 1986; Blaikie 1985, 1988; Mahat *et al.* 1986a, 1986b, 1987a, 1987b; Ives and Messerli 1989; World Bank 1992; Metz 1991; Soussan *et al.* 1995). The findings of these studies show considerable variations in both the extent and severity of the problems that have been subject to much different interpretations. Common to all are factors such as population, poverty, and property regimes, which are often blamed for degradation, but their links with land degradation are difficult to conceptualise, measure, and prove. Natural geomorphic and historical factors as well as inappropriate government forest policies have now been found to play a much more important role in affecting apparent forest

degradation than had been believed previously. Specifically, land degradation is understood and interpreted in different ways by various actors such as land users, foresters, social scientists, policy-makers, and donors. Although at any one time numerous definitions and meanings exist simultaneously, they have never been brought together and documented properly.

2.1 Questioning the Conventional Wisdom

The widely held views of natural science literature on land degradation are based on a positivist assumption of a single, objectively measurable reality and value neutrality, although some variables are inherently immeasurable (Mearns 1991). In fact, how scientists measure the world depends on what the scientific community considers important and real (Pretty 1994). Three types of difficulties are identified in scientific measurement; first, the inaccuracies of data, due to inadequate measurement techniques; secondly, the sampling, extrapolation, and interpretation of data; and thirdly, the inherently indeterminate nature of some phenomena (Jones 1995). Therefore, in recent years positivist assumptions of a single, objectively measurable reality of science are called into question, and, in the development field, a new paradigm is emerging which focusses less on rigorous science and more on local meanings. This draws the attention of researchers to take an account of pluralist assertions of multiple realities so that the views of local people will also be sought.

In soil erosion research, slope gradient and slope length were considered as the most important causes of erosion, and structural measures in the form of terraces were frequently imposed to reduce runoff. These ideas have been exported from the USA to various soil conservation projects in

Nepal, but it has recently been realised that villagers' indigenous agronomic methods that maintain good protective vegetation cover are much more effective than structural methods (e.g., terracing, retaining walls, and check dams). In addition, Ives and Messerli (1989) explain that farmers in Nepal have been blamed for poorly constructed outwardly sloping terraces. Yet they are outwardly sloping to increase drainage which reduces landslides (as the weight of the water increases the risk of slippage), and they are only poorly maintained during the heavy monsoon, presumably due to labour shortages (Blaikie 1989).

Similarly, Benkhe and Scoones (1993) reveal the limited appropriateness and validity of the conventional range management theory of communal rangelands. They noted that the prominent management problem has been concerned with controlling degradation through controlling livestock numbers. Based on the concept of carrying capacity, rangelands were judged to be overstocked and/or inefficiently used. However, physical scientists failed to appreciate the principles upon which pastoralists operate. They are opportunistic, adapting to instability by utilising high but fluctuating stocking rates and migratory patterns of foliage exploitation. These aforementioned examples show that the conventional 'scientific' views of land degradation are incomplete and highlight the importance of understanding plural meanings and definitions of degradation.

2.2 Causes of Degradation

Research on land degradation has often concentrated on identification and quantification of external causal variables without adequate attention being given to specific links between factors and land degradation. Barrow (1991) presents nine categories of factors causing degradation

which include political instability, marginalisation, and economic factors. They are just like a shopping list of causes. Similarly, Tolba *et al.* (1992) note that land degradation is the result of complex interactions between physical, chemical, biological, and socioeconomic and political issues of a local, national, and global nature. They argue that any framework or model to explain degradation, therefore, should be able to cope with these webs of interaction and mutually affecting processes. Almost all studies related to land degradation show that external forces are the key factors. However, they are difficult to measure and prove. Therefore, causes of land degradation are interpreted by various actors in different ways. Long (1992) argues that interpretations of the nature of land degradation are not only socially constructed, but different cultural lenses exist through which 'facts' about the causes of environmental change are interpreted. These are often associated with different groups of people; the classic view, for example, has been held primarily by colonial administrators, the neo-liberal view by free-market economists, and the populist view by grass roots' NGOs and social activists (see Table 2.1). They all view environmental problems in different ways.

The approaches presented in Table 2.1 above are various lenses to see a picture of the *causes of environmental problems* and these approaches are important in order to understand the development of environment paradigms. They serve, in this study, to illustrate the variability and diversity of perspectives on the *causes of land degradation* (see Table 2.2). Malthus, for example, did not explicitly discuss the relationship between population density and environmental degradation, but perspectives that assume a carrying capacity or ceiling to production have been labelled as neo-Malthusian, and they name pressure of population as the main cause of land degradation. The 'classic'

perspective identifies land degradation as an environmental problem, blaming ignorant farmers who are unaware of the effects of their actions and/or without sufficient technical knowledge to solve their problems, thus focusing on lack of knowledge and perception of a problem. The populist philosophy attributes the cause as a lack of access to resources and poverty. It assumes that people have both sufficient knowledge and incentive to prevent land degradation if they are able to, recognising the need to understand the constraints that cause land-use practices that lead to degradation. The economic/neo-classical perspective attributes price and property regimes providing inappropriate incentives as the cause of environmental problems. An actor-oriented approach is grounded in the everyday lives of men and women, be they poor peasants, entrepreneurs, government bureaucrats, or researchers. An exploration of lifeworlds is central to the actor-oriented approach.

These perspectives illustrate the range of ways that 'facts' about the causes of degradation may be interpreted. It is not possible to prove which of these perspectives is correct in any given situation, and thus competing knowledge claims may exist simultaneously.

Various development approaches and perspectives on the causes of degradation discussed earlier have permeated Nepal's forestry and agricultural sector at various points in time. They have had a direct effect on the formulation of land policies, land management, and property rights' arrangements in Nepal. It appears that there is a contradictory mixture of classical, populist, and neo-liberal styles within both agriculture and forestry-related policies.

The 'classic' model, for example, is dominant in the agricultural sector where the promotion of the new seed-fertilizer technology is emphasised. It remained

Table 2.1: Classic, Populist and Neo-Liberal View to Environmental Problems

Variable	Classical	Populist	Neo-liberal
Peasant behaviour	ignorant, irrational, traditional	virtuous, rational	rational, egocentric
Diagnosis of environmental problem	environmental solutions	community-minded socio-political solutions	economic solutions
Immediate causes of environmental problems	mis-management by users	mis-management by state, capitalists, big businesses	poor government policies and bureaucratic rules and regulations
Structural causes of degradation	over-population, backwardness, ignorance	resource distribution, inappropriate technologies	inappropriate property rights, institutions, prices, and rapid population growth
Institutional prescription	top-down centralized decision-making	bottom-up participation	market policies, property rights, resource pricing, self-targetting safety nets
Academic discipline; profession	science; bureaucratic	sociology; activist, NGOs	economics; development professional
Gender orientation	gender blind	virtuous but victimised women	gender myopia
Research framework	systematic empiricism	rapid rural appraisal, community as unit of analysis	methodological individualism
Orientation to market	not considered	exploitation	Pareto optimality and externalities
Models of peasant society	conservative, paternalistic	egalitarian	democratic/liberal
Views of collective action	deficient	essential and unproblematic	conditional rationality/ political entrepreneurs
Technology	soil conservation works	agronomic techniques of conservation	not specified

Source: Biot, *et al.* (1995).

dominant in the forestry sector at various stages of forestry administration. This is evident from the fact that land users were blamed for causing degradation, a typical paternalist/technocratic view. Consequently, during the 1950s and 1960s, the Nepali government relied excessively on the assumption that nationalisation of forest land and the tightening of legal top-down control over the resource by a centralized government bureaucracy would lead to the effective management of forests. During the 1970s, the issue of forest and land

degradation in Nepal was highlighted, the World Bank (1980) document, for example, warned that if the present rate of deforestation continues, all accessible forests in the hills of Nepal would disappear in 15 years, and the Nepalese hill farmers were blamed for forest degradation (Eckholm 1976; Wallace 1981). Technical solutions were sought, several afforestation projects and engineering measures of soil conservation were designed from this type of diagnosis to overcome the so-called forestry problem. A typical technocratic

Table 2.2: Various Perspectives on the Causes of Land Degradation

Perspectives	Assumptions about the Causes of Land Degradation
Neo-Malthusian	This perspective views that demographic pressure causing overcultivation and overgrazing leads to degradation as resources are mined to support growing populations. The literature supporting this line of argument includes, for example, Ho (1985), Lele and Stone (1989), Okafor (1991), and Myers (1992).
Classic/Paternalist/ Technocratic	The land users are blamed for causing land degradation. This perspective views land users as irrational and inefficient (environmentally unaware, ignorant, apathetic or lazy) and considers that users mismanage the land, which leads to degradation. This view is associated with colonialism (see for example, Jacks and Whyte 1939).
Populist	This perspective does not provide a theory of degradation as such. However, the populist perspective runs directly counter to the classic perspective in its defence of indigenous capability. The populist perspective has similar lines of argument as the Neo-Marxist ¹ and Faustian ² perspectives.
Economic/Neo-classical	Environmental degradation is caused by inappropriate or excessive government intervention (i.e., market or policy failure—which includes price distortions from subsidies, quotas, misvalued exchange rates, inappropriate interest rate policies, and so on) and inability to properly value the resource and imperfect information regarding the resource (see World Bank 1992).
Actor-oriented	This perspective views that differences in knowledge, perceptions, motivations, and constraints across gender, class, ethnicity, age, and religion need to be explored for a fuller understanding of social mechanisms affecting degradation, as well as differences between cultures (Long 1992). Knowledge is socially and politically constructed and this requires a differentiated analysis that allows an exploration of multiple constructions of rural peoples' knowledge (Scoones and Thompson 1992), in this case in the degradation debate. Environmental knowledge needs to be seen in its dynamic context, since the environment is constantly in a state of being conceived of, learned about, acted upon, created and recreated, and modified (Blaikie 1994). Blaikie and Brookfield (1987) note that ignorance of the consequences of actions on land, the reckless quest for profit, poverty and deprivation leading to desperate ecocide, pressure of population on resources (on which they remain somewhat ambivalent), and population decline (e.g., reduction in household labour) emerge as the underlying causal agents of degradation.

Notes:

¹ In the neo-Marxist perspective, deforestation, overcultivation, and overgrazing are seen as symptoms of, or responses to, deeper causes, that stem from the exploitative nature of capitalism. This perspective views that the structure of the international economy is partly responsible for the worsening condition of local environments in many parts of the South (see Redclift 1987).

² The Faustian perspective holds that inappropriate Western technology and its careless use is a key factor in environmental degradation in the South (see Meyer and Turner 1992). Barrow (1991) adds that not only technology transfer but also the promotion of inappropriate agricultural strategies and trade and aid relationships cause environmental degradation.

Source: Adapted from Jones (1995)

perspective was adopted. For instance, in the initial years of the community forestry programme, more emphasis was given to a large programme of reforestation with browse-resistant species. It was the trees that were paramount and the local people and their organizations were still not considered very important. The programmes were implemented in top-down, prescriptive, and target-driven fashion. These projects were operationalised through the Integrated Rural Development Projects mainly funded by donor agencies such as the USAID, CIDA, and ODA. Although the classic/technocratic approach was predominant up until the mid-1970s, it passed through many stages of struggles, adjustments, and compromises. The underlying theme in these changes was the realisation of a strategy to allow local groups to protect their environments; their livelihood interests.

During the late 1970s, at the international level, the failure of the classic approach to arrest declining agricultural productivity and halt the loss and degradation of forests was acknowledged (FAO 1978). This led to the search for an alternative approach, and soon the populist approach permeated the agriculture and forestry sector policies. The solution was seen in the local people's own understandings and interests, and their control and collective action as a viable alternative for resource management (Chapagain 1984).

Populist elements, such as active participation of local communities in resource management, reorientation, and training of technical staff, building local-level institutions, participatory micro-planning, equitable benefit-sharing, and gender-sensitive programming were proposed in all the major master plans, sector strategy documents, and periodic development plans (see, for example, MPFS, APP, and the Ninth Plan). The

NGOs were suddenly given a key role in supplementing the efforts of the public sector and, in many instances, bypassing the latter. This approach is germane to almost all the development programmes implemented with bilateral and multilateral assistance. Thus, during this period there was a shift in approach from the classic to the populist, at least in rhetoric. In reality, however, the classic elements were distinctly in place.

The neo-liberal approach has recently penetrated the policy debate. This approach has its genesis in the loan conditionalities imposed by the World Bank on the national government. It requires that countries strictly implement the 'structural adjustment programme', which, among others, requires a cutting down of the size of the bureaucracy, withdrawal of all kinds of subsidies, and increased dependence on the free market. This approach combines an anti-state position of the populist with the neo-classical economic model. In Nepal's case, for example, this approach dictates removal of subsidies on fertilizer and agricultural equipment and on activities that could potentially lead to overexploitation of environmental resources. The basic flaw in this approach lies in the utter disregard for the survival needs of the vast majority of the rural masses who have not yet made an entry to the market and whose survival depends on the provisions made by the state.

This becomes quite clear from the analysis of successive policy pronouncements that give a semblance of the populist theme on the surface, classical in content, and neo-liberal in practice. Viewed this way, Nepal's contemporary policy mix represents a *hybrid approach* that creates problems for implementation because of its various contradictory elements that are not easy to accommodate. The *hybrid*

approach creates new practical dilemmas about how to integrate top-down and bottom-up organizational approaches on

the ground. This also creates the potential for new and unknown political alignments and alliances.