

## Chapter 1

### BACKGROUND TO THE STUDY

#### 1.1 Introduction

Environmental and land degradation varies in form and magnitude; global warming, air, water and soil pollution, loss of biodiversity and the declining productivity of land, to name but a few. All represent changes that threaten the well being of present and future generations. These changes threaten the livelihood of millions of people and future food security, with implications for water resources and the conservation of biodiversity. While these changes occur globally, they are particularly felt in rural parts of sub-tropical regions where people's livelihoods directly depend on the use of natural resources. Here, land degradation has serious and visible consequences. Soil erosion, progressive nutrient depletion, loss of vegetation cover, fuelwood shortages all affect rural livelihoods. Food security is at stake, while poor water quality and shortage of fuel jeopardize people's health.

Agricultural production stagnates at the moment that rural areas are confronted with increasing demands to feed a rapidly growing population. Until recently, it was possible to cope with this population growth by bringing new land under cultivation. Today this option is no longer available. In addition, experience shows that attempts to increase the productivity of natural resources are hampered by the absence of inputs and an agricultural support infrastructure. Indigenous systems to manage natural resources, generally developed under much lower levels of population pressure cannot adequately respond to these rapidly changing situations. At the same time, existing policies are often in conflict with traditional approaches to organize natural resource use and land tenure. There is therefore an urgent need to develop ways of combating or reversing the worldwide trend of accelerated soil degradation, by using an ecosystem approach, taking into account the needs of populations living in these ecosystems and recognizing the multiple functions of agriculture that govern their way of survival.

## 1.2 Background

This study is concerned with the determinants, impact, and management of land degradation and rural poverty, and it also looks at the research needs for future survival within the South African context.

In South Africa the previous apartheid dispensation had portioned marginal areas into homelands which were reserved for the Black communities. These areas are mainly found in the provinces of the Eastern Cape, Free State, KwaZulu Natal, Mpumalanga, Northern Cape, Northern Province, and North West. People who lived in these areas were disadvantaged, neglected, and often called the "forgotten people". It has therefore become the burden of the new government to start the process of assessing possible avenues for changing this reality by assessing various research options for marginal lands available to them. The point of departure is that marginal lands and the rural poor are likely to be concentrated in these areas, and further, that the incidence of extreme poverty will be higher than on favoured lands. These areas are seen to be fragile and extend across the bulk of presently settled lands. Accordingly, there is concern about the prospects for large-scale resource degradation, further intensification of poverty regimes and the lack of meaningful interaction from agricultural research on the poor in these areas.

All land types – marginal or favoured – require research related to environmental protection and sustainable production which can, to a greater or lesser extent, help in the quest for poverty eradication and expanded food security for the poor. On favoured lands, expanded production can result in lower prices for urban consumers, as well as increased jobs and food security for the rural poor. To the extent that the poor live on marginal lands, research that leads to productivity increases on those lands can also help to eradicate poverty and increase food security. It is because of these concerns that land degradation which is generally defined as the reduction in the soil's ability to contribute to crop production, and rural poverty, form the foci of this study. In marginal areas of South Africa, our understanding of the intricate processes of poverty and land degradation are still extremely limited. Definition, in

each process, is driven largely by the perceptions of those analyzing the phenomena with each group bringing their own strong perceptions to bear. The lack of clear conceptualization, the observed heterogeneity and diverse perceptions of those attempting to circumscribe the phenomenon complicate attempts at measurements. Attempts at quantification suffer due to - among other things - a lack of representativeness and reduce the confidence that can be attached to such extrapolations. Evaluating cause and effect with confidence implies, ideally that we have been able to observe the processes at different points in time for a large number of well-defined and relatively homogeneous situations. In most cases, the lack of adequate data and the complexity of the relationships that need to be modeled, seriously limit rigorous empirical verification. Since a fuller understanding of the complex interactions between land degradation and rural poverty naturally leads on from a more comprehensive understanding of the individual processes, it too suffers from all the problems impeding a deeper understanding of each.

The aggregate information available is not very useful for making judgements about poverty and land degradation. Evidence available for a few micro-level studies are mixed and often contradictory. Most of the literature relates to the controversy regarding the reasons for the adoption (or non-adoption) of conservation practices. This literature does not specifically address the behaviour of the poor except through the cost implications of different conservation technologies and the incentive structures that it influences. Theoretical considerations are often cited as to why the poor can be expected to behave in ways that are land degrading. However, these considerations can generally apply just as well to the non-poor and can be explained by overall low levels of development. The pressures arising out of the processes of economic development that might induce people to degrade the land, have been classified in the literature as those related to: increase in population; declines in common property resources; interest rate changes; and technology transfers. However, the literature also includes considerable theoretical and empirical evidence that indicates that the response to population pressures and market forces, in the long run, is an endogenous process of adaptation towards sustainable behaviour.

Data are available, but does not focus mainly on problem areas and generally on marginal lands. Integration of these data and extrapolation with geographical information systems (GIS) to cover the entire marginal land zone is urgently needed. At the household level, much more research, in a variety of settings over a reasonable length of time, is needed for a fuller understanding of decision-making processes, especially in terms of the relationship with land. Such research should ideally be built on detailed household-level longitudinal socio-economic surveys with specific land use and quality assessment modules. Only then will it be possible to link behaviour to poverty status.

In moving ahead to articulate a strategy for achieving the overarching goal of sustainable poverty eradication and increased food security, the next step specifically with respect to rural poverty is to identify **where** these people live and their present numbers. From this information base, one may move to characterize the current status of the lands from which they derive part or the bulk of their livelihoods. From a technological perspective the goal may be to increase productivity of resources used in agriculture, this status may initially be expressed in terms of biophysical potential, i.e. biophysically favoured versus marginal lands. However, the determinants of poverty (marginal people) lie mainly with socio-economic and institutional aspects (markets, policies, physical infrastructure, human capital) which govern the choices of people in using natural resources to which they have access and in obtaining off-farm incomes. With an understanding of the biophysical, institutional, policy, and socio-economic characteristics that collectively explain **why** the various target groups are poor, one is in a position to explore research options, of which outputs and outcomes may be expected to impact on sustainable poverty alleviation. From that point one can proceed to examine what the government and the research community might do, i.e. the entry points where there is an expectation of significant impacts from research through output of public goods.

### 1.3 Aims and Objectives of the Study

The aim of this study is to trace the evolution of general thinking, starting from four tenets of conventional wisdom about: (i) the nature of marginal lands; (ii) the concentration of rural poverty on such lands; (iii) the linkage between poverty and accelerated resource degradation; and (iv) the role of agricultural research in poverty eradication on these lands. There are thus four major objectives that are to be achieved by this study, namely:

- (i) to define land degradation and sustainability;
- (ii) to investigate the impact of land degradation on the poor;
- (iii) to investigate the impact of poverty on natural resource management; and
- (iv) to determine and investigate the links between poverty and land degradation.

It is envisaged that demonstration and/or intervention projects would develop from this initiative. These projects could facilitate much greater interaction between the different "actors" to bring realism where narrow disciplinary perceptions prevail, especially in the area of land degradation. Such interactions would lend much greater realism to the understanding of issues that have important implications for the present and future of South Africans in these areas. These interactions should naturally build on existing understanding, so as not to reinvent the wheel. The broad research agenda on poverty and land degradation could only be better defined after a reasonable period over which such understanding is developed. Such research can only enhance the efforts within the agricultural research community toward integrating commodity research with natural resource management. This research agenda will form a key forum for addressing the South African dearth of knowledge about the link between land degradation and poverty.