A Geographical Study of Agricultural Change since the 1930s in Shixini Location, Gatyana District, Transkei

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Abstract

This study examines the dynamics of agricultural change amongst traditional African small-holder farmers in Shixini location, Gatyana District, Transkei. This entailed an examination of the historical, regional and local causes of agricultural change and the response of the local community. What became evident was that there had been a gradual decline in agricultural output after the 1930s due to a combination of socio-economic and environmental constraints. Pressure on limited resources and land degradation, a consequence of socio-economic pressures on the African peasantry and agricultural expansion, reduced carrying capacities and soil fertility within the African reserves. Racially discriminatory policies also reduced African access to agricultural markets and forced peasants into migrant labour. The initial response to this agricultural decline was to maintain cultivation and pastoral practices, despite declining output, and rely more heavily on migrant labour. However, massive population growth from the mid 1950s onwards stimulated a rapid change in cultivation practices. Rural households found it increasingly difficult to gain access to arable land in river valleys and growing poverty undermined their ability to cultivate fields. In response to these conditions the rural population abandoned their fields and expanded garden cultivation. Garden cultivation was a more intensive method of cultivation which made more efficient use of household resources, maintained long-term yields and had a less detrimental impact on the soil.

This study attempts to make a contribution to southern African historiography and historical geography. Since the rise of radical human geography in the 1970s there has been a growing number of political economy studies focusing on capitalist expansion, racially discriminatory state policies and associated class conflicts in South Africa. However, most of these studies have focused on urban communities. The political economy of African rural areas has been sorely neglected by human geographers despite the enormous growth of such studies amongst historians and other social scientists. This study of agricultural change in Shixini location, Transkei, adds to the small collection of geographical research on the political economy of African rural areas. It also adds to the large body of historical research by focusing on the recent past, a much less well documented period. The most important component of the study was an examination of the response of the rural community to socio-economic and environmental changes. This brought the often neglected role of human agency within the world political economy into the study. Environmental factors, often neglected by historians and human geographers, were also brought into the analysis. The examination of such a broad range of factors was facilitated through the use of a wide variety of source material including historical, anthropological and socio-economic literature, official statistics, archival records, aerial photographs and a sample survey.

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Chapter 1: Introduction

1.1 Research context

Over the last 20 years there has been an enormous growth in radical human geography both inside and outside South Africa. Within South Africa this has led to a process of 'decolonising' South African geography, an increasing awareness of the dominated classes, and a search for 'peoples geography' (Crush *et al.*, 1982; Wellings and McCarthy, 1983; Rogerson and Parnell, 1989). Radical urban geographers have examined urbanisation in the context of world capitalist accumulation and focused on working class struggles for urban space, housing, transport, services, recreation, and resistance against racial segregation in urban areas (Badenhorst and Rogerson, 1986; Dauskardt, 1989; Hart, 1986, 1988; Mabin, 1988; McCarthy and Friedman, 1987; Parnell, 1988a, 1988b, 1988c; Pirie, 1983, 1984, 1986, 1987; Proctor, 1986). Although significant progress has been made in decolonising urban geography, few geographers have contributed to this process in the historical geography of southern Africa's rural population. Crush (1978, 1979a, 1979b, 1980a, 1980b, 1988) is one of the few historical geographers to make a major contribution in this regard. He examined colonial state policies aimed at forcing the African communities in southern Africa into wage labour on the mines and the subsequent struggles around labour migration as well as rural rehabilitation policies in the African reserves. The term 'African' is used in this thesis in preference to the term 'black' as, in the South African context, 'black' is often used to refer to all non-white race groups. Other historical geographers, not necessarily employing a political economy approach, have focused largely on frontier expansion, colonial policies and the rise of commercial agriculture. Very little geographical work has been done on the political economy of South Africa's African reserves despite the growth of such studies amongst historians and other social scientists (Crush and Rogerson, 1983; Rogerson and Parnell, 1989).

This study of agricultural change in Shixini since the 1930s attempts to make a much needed contribution to radical historical geography of southern Africa. It also builds on political economy studies of agrarian change in the Ciskei and Transkei reserves since the beginning of the colonial period (Beinart, 1982; Bundy, 1979; Moll, 1988; Peires, 1981, 1989; Simkins 1981). However, most of the research conducted by historians has focused on the period prior to the 1930s for which archival material is available while this study focuses on the period since the 1930s. Social scientists have examined the socio-economic characteristics of rural areas in South Africa's African reserves but very little research on agriculture has been conducted in these areas. One of the reasons for this gap had been the assumption that peasant agriculture in

South African reserves was destroyed by the 1930s and that since then the rural population has been functionally urban, depending heavily on migrant wage labour (Beinart, 1988).

This thesis also attempts to add to the few political economy studies which have examined agrarian change in the African reserves since the 1930s (Moll, 1988; Simkins, 1981). Moll (1988) and Simkins (1981) limited their analysis to broad regional and structural changes. Their work indicated that the decline in peasant production was much slower than Bundy's (1979) original research on the rise and fall of the South African peasantry suggested. In fact, they maintain that it continued for a long period after 1930. One of the problems with these studies was that they were based largely on an analysis of official agricultural statistics which provided useful information on general regional trends but no indication of the specific dynamics of these changes in particular areas. Moll (1988) also drew heavily on marxist structuralist theories. These theories limited the role of human agency in determining the nature of economic development. Consequently, Moll's (1988) analysis focused on economic changes and the role of the state. The influence of culture and the response of local communities to structural and environmental changes were not examined by Moll (1988). The intention of this study is to attempt to show how changing socio-economic and environmental conditions influenced agricultural practices in Shixini and how the local community responded to these changes. Another important aspect of this study is an examination of the relationship between the environment and society. Most southern African historical research ignores the influence of environmental factors or refers to it in very general terms. The regional political ecology studies of land degradation in Africa and Asia have shown how colonial policies undermined traditional rural economies and forced African land users to maximise their use of the land and skimp on conservation measures (Blaikie and Brookfield, 1987). These studies provide overwhelming evidence that land degradation increased rapidly during the colonial period. Consequently, the impact of socio-economic changes on the environment and *vice versa* are incorporated into this analysis of agricultural change in Shixini.

1.2 Problem statement and aims

A preliminary study of land-use practices in Shixini undertaken by the author in 1988 (Talbot, 1988) showed that significant changes in land-use practices amongst African peasants had taken place since the 1940s. These changes included an enormous decline in the area of fields under cultivation along with an increase in the number and size of homestead gardens. However, the reasons for such changes remained unclear. Marxist theories suggested that structural economic changes and state policies were the major factors stimulating these changes. Erosion and environmental degradation had also been identified as a causal factor. However, these theories

touched only on the issue of declining agricultural production and even this was not adequately explained. They could not explain the changes in land use practices. If we accept that the rural population were not passive spectators but active participants, these changes could only be explained if human agency and class conflicts were brought into the analysis.

Consequently, the general question addressed in this thesis was: *What were the major socio-economic and environmental factors stimulating agricultural change in Shixini and how did the local community respond?* There were, therefore, two components of the analysis. Firstly, to identify the major socio-economic and environmental factors prompting agrarian change. Given that these were historical processes it was necessary to examine the political economy of the region in the period prior to the 1930s in addition to the period under study. Secondly, the response of the local community to these socio-economic and environmental changes was examined.

1.3 Methodology

The regional political ecology approach and a variety of data sources were used to achieve the aims of the thesis and address the question posed. The regional political ecology approach ensured that the analysis considered both historical and recent factors so that the influence of political, economic and environmental processes occurring in the period prior to the 1930's could be ascertained. Agricultural practices were also believed to be influenced by political, economic and environmental processes operating at a variety of societal levels. Thus the influence of local, regional, national and international factors were examined to ensure that all these levels were included in the analysis. The variety of data sources used ensured that all of these factors were examined. These data sources included historical, anthropological and socio-economic literature, archival material, official reports and statistics, aerial photographs and a questionnaire survey.

1.4 Description of study site

Shixini location is a small administrative area in the Gatyana District (formerly known as the Willowvale District) of the Transkei (see Figures 1.1 and 1.2). The Transkei is South Africa's largest and most consolidated African reserve which was given 'independence' in 1976. As illustrated in Figure 1.3 the Transkei is located along the south eastern seaboard between the Natal and Cape Provinces of South Africa, and Lesotho. Like the rest of South Africa's reserves, it is one of the least developed areas in the South African space economy. Despite industrial decentralisation policies, the level of industrial development in the Transkei remains

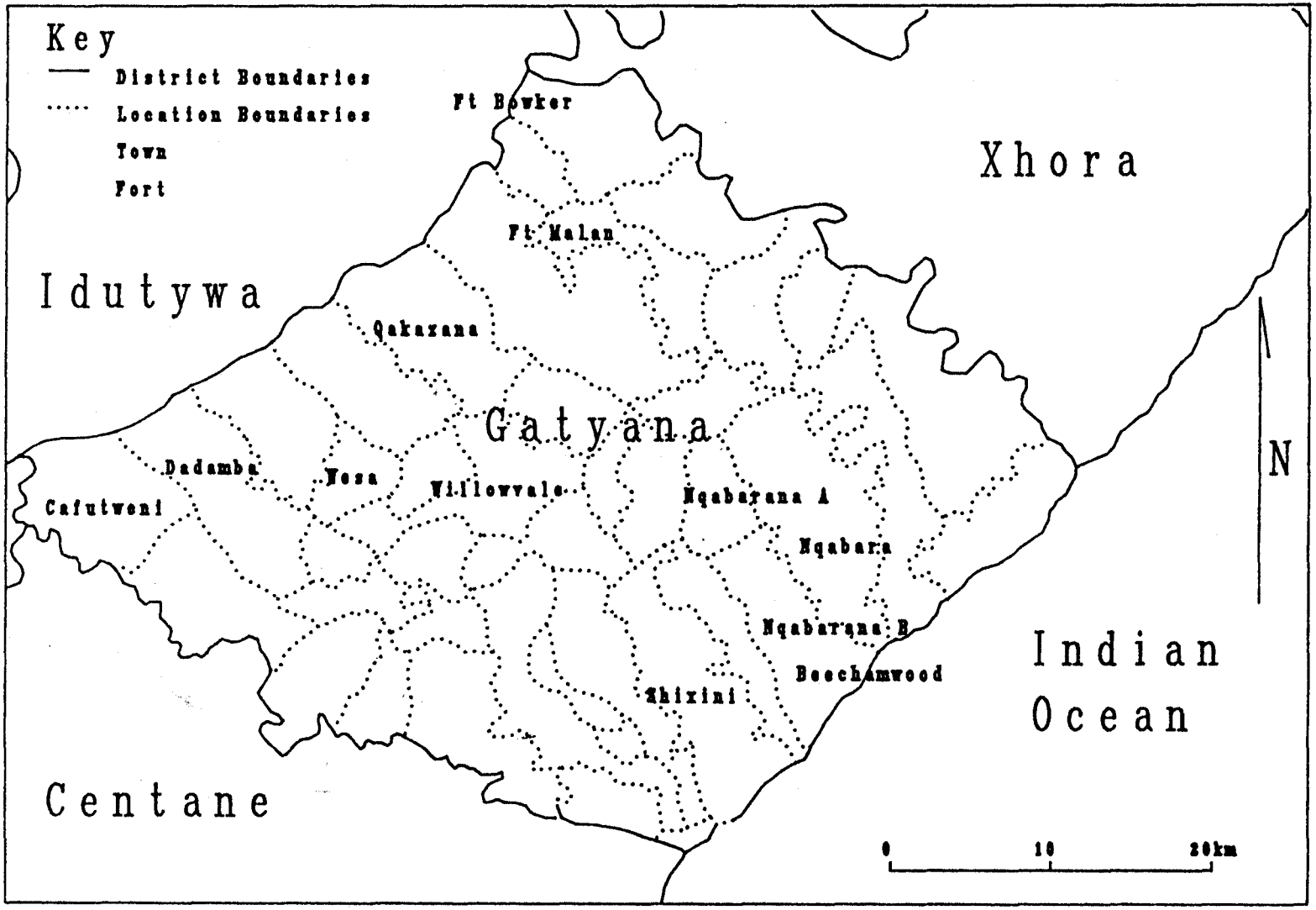

Figure 1.1 Map of Gatyana District

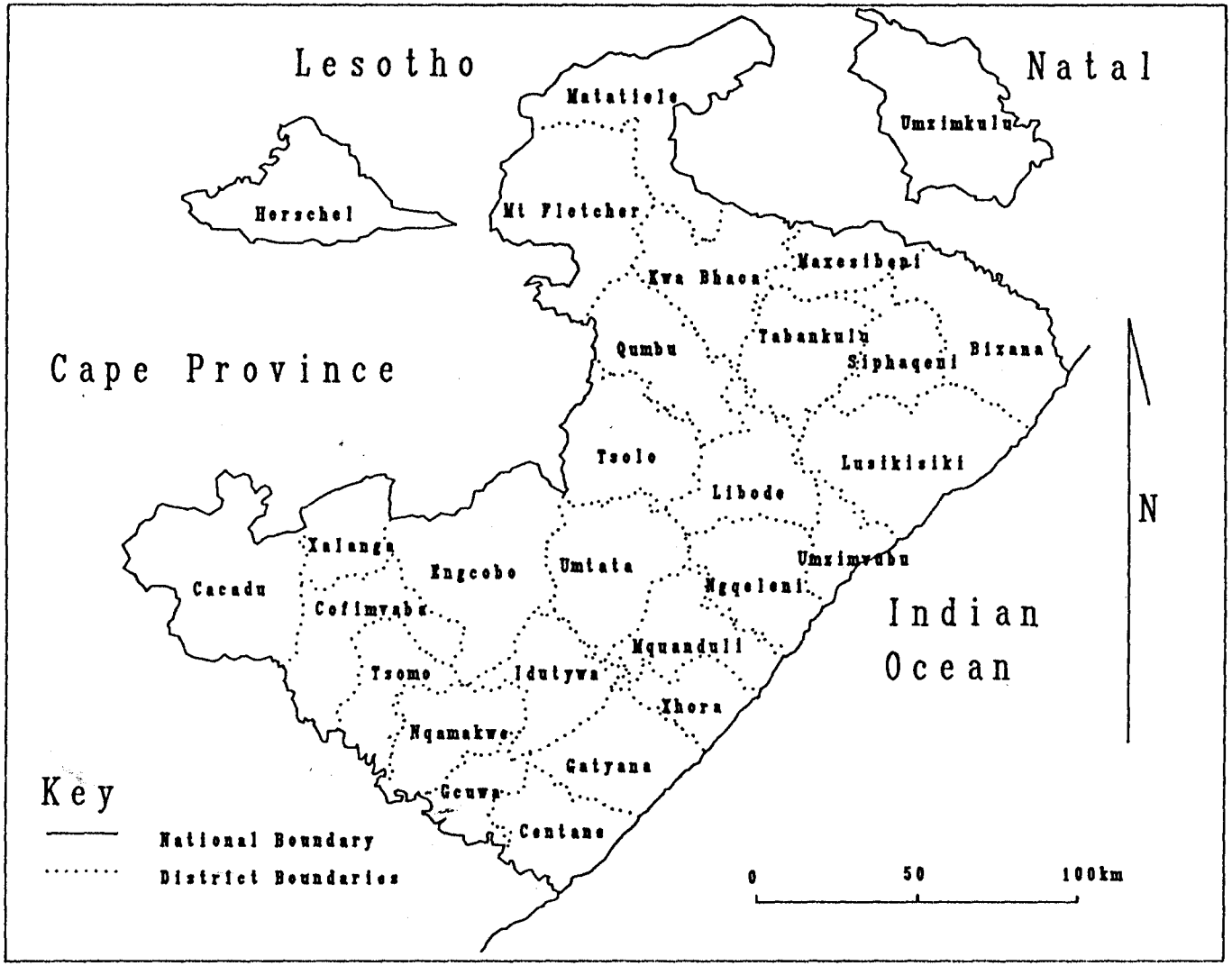

Figure 1.2 Map of Transkei Districts

Orientation Map

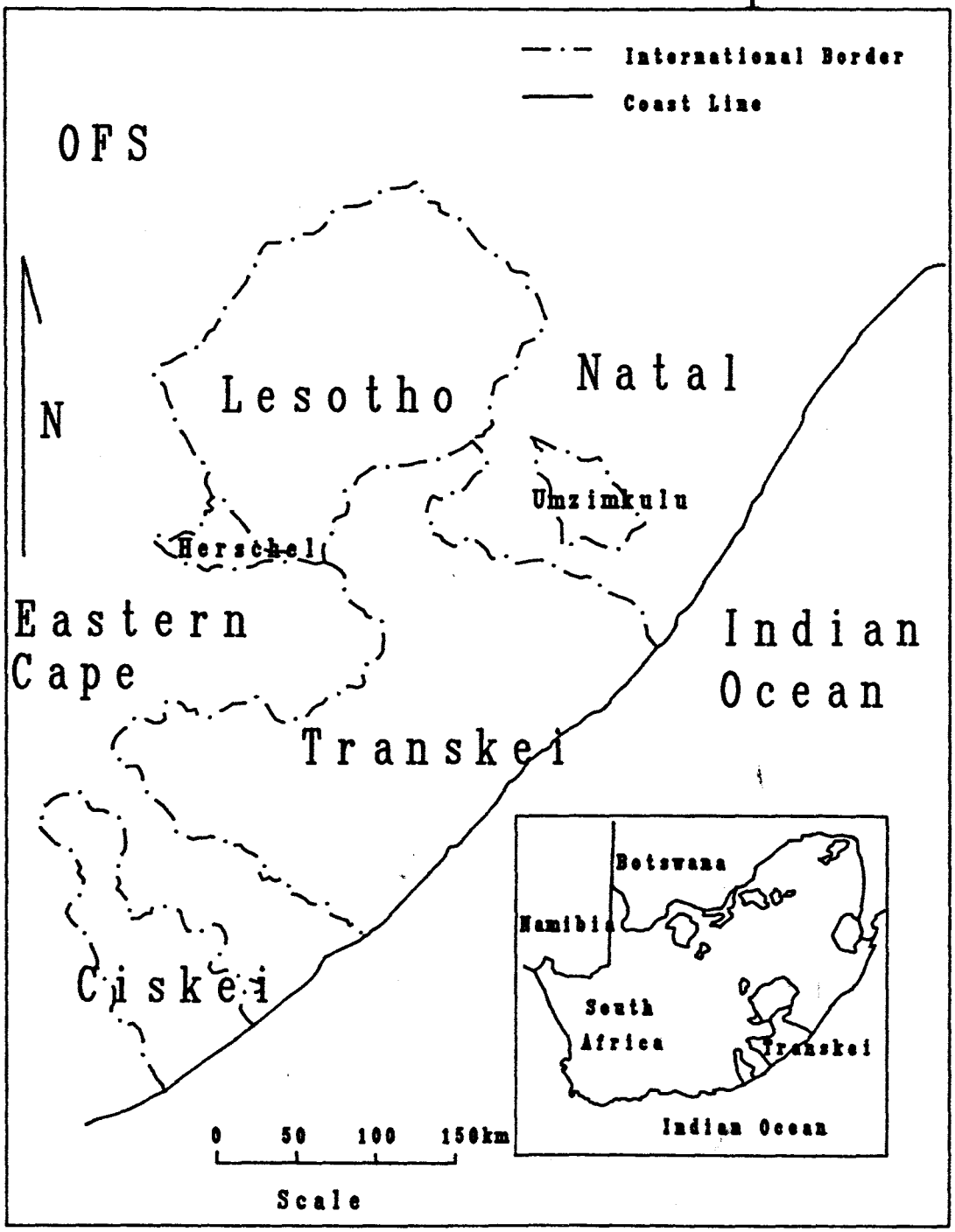

Figure 1.3 Orientation map

very low. The bulk of the population rely on household cultivation, livestock rearing and migrant wages for survival. The transport and communication networks are also poor and simply channel the flow of labour, income and goods between the most peripheral areas and the main urban centres in Transkei and white South Africa. There are few transport and communication links between adjacent peripheral areas (Osmond *et al.*, 1983).

Shixini location and the Gatyana District are situated in the rugged coastal belt on the south eastern seaboard. The contour map of Shixini in Figure 1.4 gives an indication of the rugged terrain in this area; rising from the coast to about 300m. Annual rainfall in the area is high and ranges between 800 and 1000mm. Weakly developed Glenrosa, Mispah and Swartland soils dominate in the district. The vegetation is largely coastal forest, thornveld and grassveld (Development Bank of Southern Africa, 1987).

Although Shixini location and the Gatyana district as a whole are relatively close to some of the large urban centres in Transkei and the Cape, they remain amongst the least developed and traditional areas in Transkei. The only town in the district, Willowvale, is serviced with poor roads that become impassable in very wet weather. Willowvale has a magistrates court, government offices, a post office, garage, clinic, church, schools, hotel, liquor store and a number of small supermarkets and traders. The vast majority of the population live in the rural locations which are linked to Willowvale by secondary dirt roads. These roads are usually poorly maintained. Household agricultural production forms an important part of the rural economy supplying a large percentage of household food requirements. However, the majority of households need to supplement these supplies with regular purchases of basic foods (Osmond *et al.*, 1983). Maize, beans and pumpkins are the main crops grown. Households also raised cattle, goats, sheep, pigs and chickens.

The nature of the settlement and land-use practices within the district differ depending on whether locations have undergone betterment planning or not. Approximately 50 percent of the Transkei has undergone such planning, which involved the re-organisation of settlements into concentrated villages, the demarcation of suitable arable lands, which exclude steep slopes and eroded areas, and finally the demarcation of grazing camps. This planning has rarely been associated with the provision of fencing so that grazing camps are usually not fenced. In addition, very few extension services were provided due to the lack of finance and staff. However, Shixini is not a betterment area. Households are situated on the ridges in the traditional scattered manner. Cultivated fields are located on the valley bottoms and slopes while gardens are located next to homesteads on the ridges. The grazing areas include all the

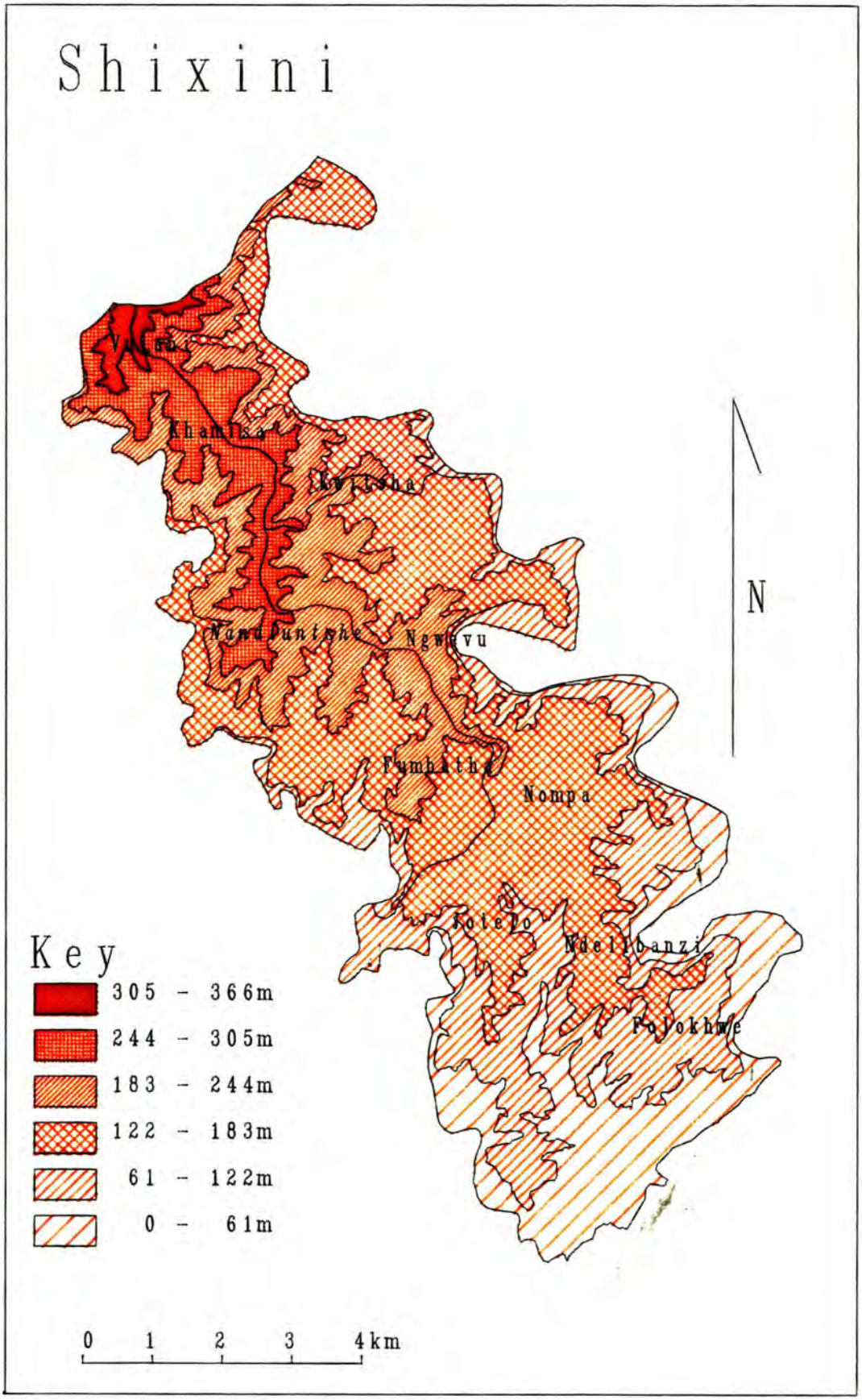

Figure 1.4 Contour map of Shixini

rest of the land not used for cultivation or settlement. The spatial location of these land-use practices are indicated in Figures 1.5 and 1.6.

1.5 Outline of Thesis

This first chapter presents the aims and overall structure of the study as well as providing some background information. Chapter two elaborates on the theoretical approach adopted in the study and the contribution it attempts to make to southern African historiography and historical geography. This is followed by the three main parts of the analysis of agricultural change in Shixini. Firstly, chapter three discusses the history of agricultural change in the Gatyana district since the 1800s. The sources used to compile this history include historical, anthropological and socio-economic studies of the Xhosa people in the region together with archival material from the Willowvale Magistrate's office and official reports and statistics. The second part of the study, chapter four, examines changes in population, settlement, and land-use practices. Three sets of aerial photographs, one set for 1942, 1962 and 1982 respectively, are the sources used in this analysis. This chapter forms a unit with it's own introduction, methodology, results, discussion and conclusion. A questionnaire survey of Shixini residents forms the third part of the analysis. This is discussed in chapter five. This chapter provides descriptive information on the socio-economic structure of the community and their agricultural practices. It also examines the influence of household size, structure and wealth on cultivation practices and local perceptions of agricultural change and obstacles to cultivation. Once again this chapter forms a unit with it's own introduction, methodology, results, discussion and conclusion. All the different components of the analysis are then brought together in the final and concluding sixth chapter.

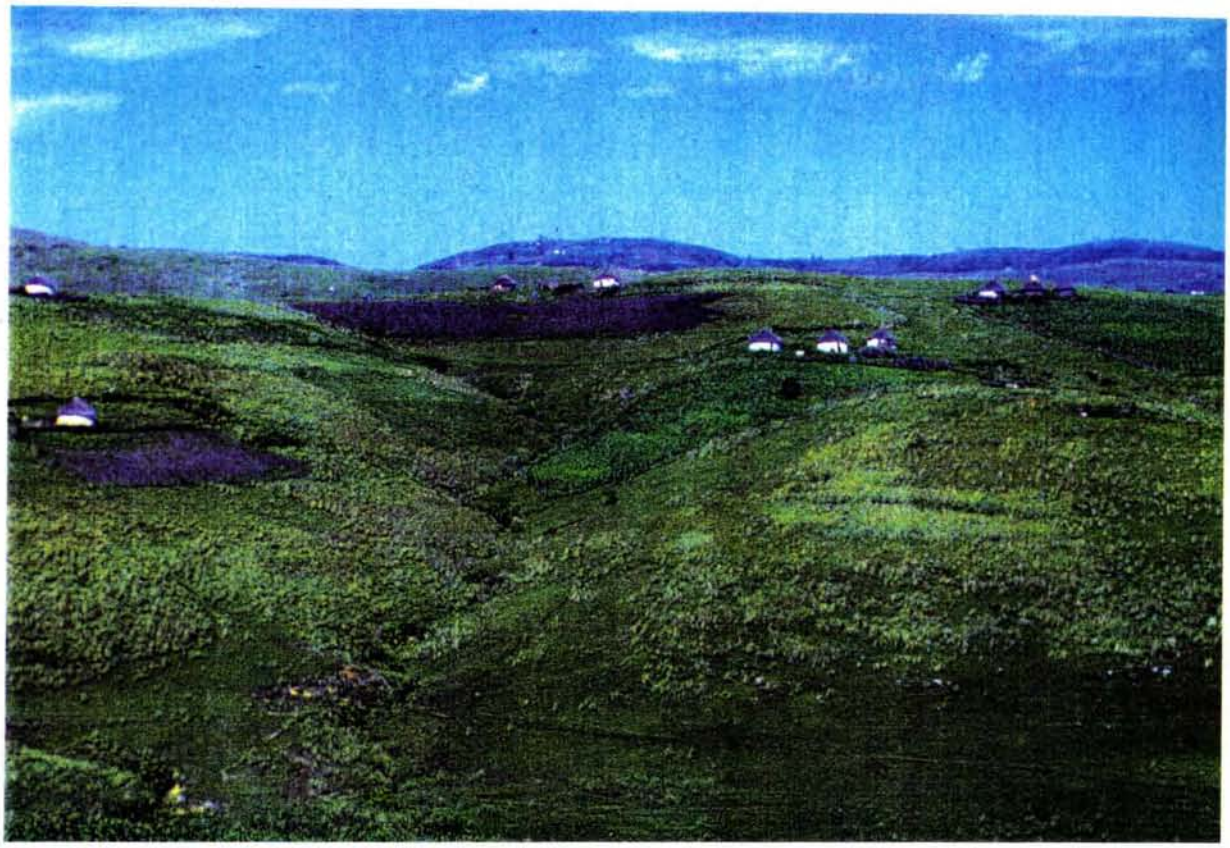

Figure 1.5 *Photograph of the typical settlement pattern in Shixini*

Figure 1.6 *Photograph of the river valleys and field cultivation in Shixini*

Chapter 2: Theoretical Considerations

The theoretical paradigm adopted in this study was informed by the debates within development studies over the last two decades and recent theoretical contributions by geographers. Consequently, the first section of the chapter discusses the evolution of marxist and neo-marxist theories of development over the last 20 years and recent advances in radical geography and other social sciences. This is followed by a discussion of the approach adopted. The third section of the chapter considers the contribution the thesis attempts to make to southern African agrarian historiography and South African geography.

2.1 Theoretical advances in development studies

Both marxist and neo-marxist theories fall within the political economy paradigm. This general approach is described by Peet and Thrift (1989) as follows:

> "economy is understood in its broad sense as social economy, or a way of life, founded in production. In turn, social production is viewed not as a neutral act by neutral agents but as a political act carried out by members of classes and other social groupings. Clearly, this definition is influenced by Marxism, the leading class-oriented school of critical thought. But the political economy approach in geography is not, and never was, confined to marxism" (Peet and Thrift, 1989, p 3).

The political economy approach was first adopted by human geographers in the 1970's but has undergone a number of changes and revisions since then. The specific variant of the general approach adopted here was informed by the progress and debates within the general paradigm. It is necessary therefore, to outline the developments within the political economy approach before moving on to discuss the approach employed in this thesis.

Dependency theory was one of the first political economy theories adopted by human geographers. Dependency theorists such as Frank (1969), Emmanuel (1972), Baran (1973), Dos Santos (1973) and Wallerstein (1974), also known as neo-marxists, argued that development processes in third world countries such as South Africa had to be located within the broader historical context of capitalist expansion (Beavon and Rogerson, 1981). The continued growth of capitalist expansion in the core areas of the world capitalist economy was dependent on the exploitation and transfer of surplus from the periphery. This was achieved through the unequal exchange of cheap raw materials from the third world for expensive manufactured goods from the advanced industrial countries. These exploitative relationships existed wherever non-capitalist societies were incorporated into the world market and acted to inhibit industrial

development within the periphery. The result was the 'development of underdevelopment' (Frank, 1969). According to these theories, the development of the periphery could only occur if the exploitative exchange relationships between the core and periphery were destroyed (Corbridge, 1989). Dependency theories have been applied to South Africa's historical experience by a number of historians, social scientists and geographers. Bundy (1979) illustrated how, during the process of capitalist penetration, changes in the capitalist economy and state policy first prompted the growth of African peasant production and later destroyed it to supply cheap migrant labour to the mines (Bundy, 1979).

These pessimistic views of capitalist development in the third world were a response to the overly optimistic views of the modernisation theorists. The modernisation theorists argued that economic growth in the core would initially increase inequalities between the core and periphery but eventually result in the development of all areas within the space economy (Bauer, 1965; Hagen, 1962; McClelland, 1961; Rostow, 1971). These modernisation theories derived from neo-classical economic theory which ignored the influence of the state and politics (Beavon and Rogerson, 1981).

The dependency school came under criticism from marxist theorists during the 1970s and 1980s. Corbridge (1989) summarizes the major criticisms of dependency theory as follows. Firstly they were criticised for equating trade and exchange relations with capitalism. Their analysis focused on exchange relations rather than relations of production. Secondly, they were not able to explain, for example, the rise of newly industrialising countries due to the aspatial and ahistorical nature of the approach adopted. Finally, the debate between modernisation and dependency theorists had become unnecessarily polarised. While the modernisation theorists believed that all countries would follow the same path to development as the current advanced industrial countries, the dependency theorists argued that capitalist penetration into third world countries would lead to the underdevelopment of these areas. They would not be able to develop unless they cut themselves off from capitalist world economy and opted for socialism. Neither of these theories were able to explain the wide variety of developmental experiences within the world economy.

Once dependency theory had been discredited political economy theorists turned to classical marxist theories of the articulation of modes of production. Rosa Luxemburg was the first proponent of this theory and argued that overproduction drove capitalism to expand into non-capitalist modes of production. Capitalist expansion would result in the industrial development of the periphery as "capitalism is everywhere driven to exploit labour power" (Corbridge, 1989, p 229). The lack of development in the third world was explained in terms of "a failure of

capitalism to take root there" (Corbridge, 1989, p 229). Once the capitalist mode was ensconced in the periphery it forcefully undermined the non-capitalist mode in an attempt to destroy the peasantry and force them into wage labour. More recent marxist theorists have differed from Luxemburg's original theory. According to Rey (1971, 1973) the initial interaction between the capitalist and non-capitalist mode of production is brought about through trade. As the ties strengthen the capitalist mode of production begins to dominate the non-capitalist mode but still makes use of it. Finally, the capitalist mode completely dominates and destroys the non-capitalist mode of production. However, a less mechanistic theory of articulation forwarded by Wolpe (1980) and others argues that capitalism preserves the non-capitalist mode of production for lengthy periods in order to transfer the costs of reproducing labour to the non-capitalist mode. These theories were particularly influential amongst South African marxists and resulted in the conceptualisation of a dual economy in which capitalist development and non-capitalist underdevelopment exist along side one another (Corbridge, 1989).

However, these are not the only marxist theories of capitalist development. Warren (1973, 1980) argued that capitalist imperialism was always progressive and illustrated the vitality of capitalist development in developing countries (Corbridge, 1989). He argued against those who believed that capitalist development was inhibited in the third world. The 'New International Division of Labour' (NIDL) theorists (Peet, 1987; Seidman and O'Keefe, 1980; Slater, 1987) on the other hand, had a much more pessimistic view of capitalist development in the third world. They argued that capitalist development in the third world is relatively small in scale and limited to the processing of raw materials and assembly of parts (Corbridge, 1989). In addition, the rapid industrialisation in the newly industrialising countries (NICs) was not the result of changing conditions in the third world but simply a change in capitalism itself. The rise of the NIC's did not indicate that the unequal and exploitative relations between the advanced capitalist countries and the developing countries had changed (Corbridge, 1989).

A crisis in Marxist development studies and radical human geography came to the fore in the mid 1980's when the structuralist marxist positions discussed above came under heavy criticism. Dependency theory and marxist theory were seen as having four common failings. Firstly, they were criticised for being aspatial and ahistorical. They could not account for the large variety of ways in which capitalist and non-capitalist social formations interacted. Secondly, their reactionary nature polarised the debate unnecessarily. Thirdly, their uncritical and ambiguous use of terminology was also criticised. Dependency theories in particular were guilty of this failure. The last criticism was that they were too mechanistic or economistic in their analysis of capitalism. This was the result of "defining capitalism in terms of a set of necessary laws of motion which together work to produce a fixed set of spatial outcomes" (Corbridge, 1989, p

233). This criticism relates back to the point that these marxist theories were aspatial and ahistorical. They did not take into account the enormous diversity of capitalist relations. Their inability to explain this variety was directly related to their economism. The marxist and neo-marxist theorists argued that all social formations were determined by the capitalist forces and relations of production which made up the economic base. Politics, ideology, culture and space were attributed very little influence on the form which societies acquired. The influence of human agency was minimised.

In response to these criticisms a new school of marxist thought developed around Althusser's theory of "the relative autonomy of the political and ideological instances" (Corbridge, 1989, p 234). However, according to this theory, "the economy remains determinant in the last instance" (Corbridge, 1989, p 234). The result was that these theories were rejected as disguised economism (Corbridge, 1989).

This inability to explain the enormous variety of social formations within the world economy stimulated a heated debate on the relative importance of structure and agency in shaping social formations. This debate has raged for a number of years without yielding any generally accepted alternative theory to structuralist marxist theories (Peet and Thrift, 1989; Corbridge, 1989). However, there have been a number of new theoretical and methodological developments which have grown out of this debate and informed the approach adopted here. The definition of class is being expanded to avoid focusing too narrowly on the economic characteristics. Cultural, political and social aspects of class and class conflict have been incorporated into the concept in an attempt to move away from economistic analyses. A number of geographers have also stressed the importance of localities and space. They have argued that "space is not just a reflection of the social but a constitutive element of what is social" (Peet and Thrift, 1989, p 18). These theories stemmed from an initial investigation into "the effects of international industrial restructuring on local areas, and especially on why different local areas produced different responses" (Peet and Thrift, 1989, p 22). This research soon spread into other fields and stimulated a complex debate on the ability of localities to influence their own development (Peet and Thrift, 1989).

The regional political ecology approach added to these contributions by synthesising the political economy approach with an examination of the environmental factors thus breaking the barriers between human and physical geography. This approach was used in land degradation studies and examined the impact of socio-economic change on environmental degradation (Blaikie and Brookfield, 1987). These theorists have "found it necessary to move not only 'upward' from the land manager to the social and political system, but also backward in time to understand the

antecedents of modern (degraded) conditions" (Blaikie and Brookfield, 1987, p 100). In other words, the causes of land degradation were not just the consequence of poor land-use practices. These theorists have shown that poor land-use practices were often caused by social and economic pressures on land-users which forced them to maximise their use of the land and skimp on conservation measures. Often, land degradation was found in areas populated by "politically marginalised and powerless people with little or no realistic alternative to what they are doing within the existing political power structure and parameters of 'development'" (Baker, 1984, p 53). Studies of land degradation within this school of thought have provided overwhelming evidence that land degradation increased enormously during the colonial period (Blaikie and Brookfield, 1987). In addition, land degradation has been found to have had a heavier impact on poor households within third world rural areas. Wealthier households and elites were often able to get access to alternative land or new technologies which helped them to avoid the negative effects of land degradation.

2.2 Theoretical approach

The political economy and regional political ecology approaches were adopted in this thesis in an attempt to uncover the dynamics of socio-economic and environmental change within Shixini and the response of the local community, or parts thereof, to these processes. Agricultural change in Shixini was believed to be influenced by both local and regional factors (see Figure 2.1). The local factors included environmental constraints and degradation, the traditional political economy and conflicts between different classes within the African community, and between Africans and Europeans. The regional factors encompassed South African and Transkeian state policies, political and class conflicts within the capitalist mode of production, and changes in the nature of capitalist expansion.

The general criticisms of the structuralist approach were noted and, where possible, avoided. The thesis examined the effects of the interaction of the capitalist and non-capitalist relations of production on agricultural practices in Shixini. Agricultural change was not assumed to be simply the result of changing exploitative capitalist relations. The pre-capitalist mode of production, class conflicts within that mode and the environmental constraints in the area also had a significant influence on agricultural practices. State policies and class conflicts within and between the capitalist and pre-capitalist modes were other important factors stimulating agricultural change. Highly functional theories of the role of the state in promoting capitalist expansion were avoided. Rather colonial policies were seen to be sensitive to class conflicts within and between the two modes. In addition, the rural African population was not assumed to be a passive spectator of socio-economic processes but an active participant responding to

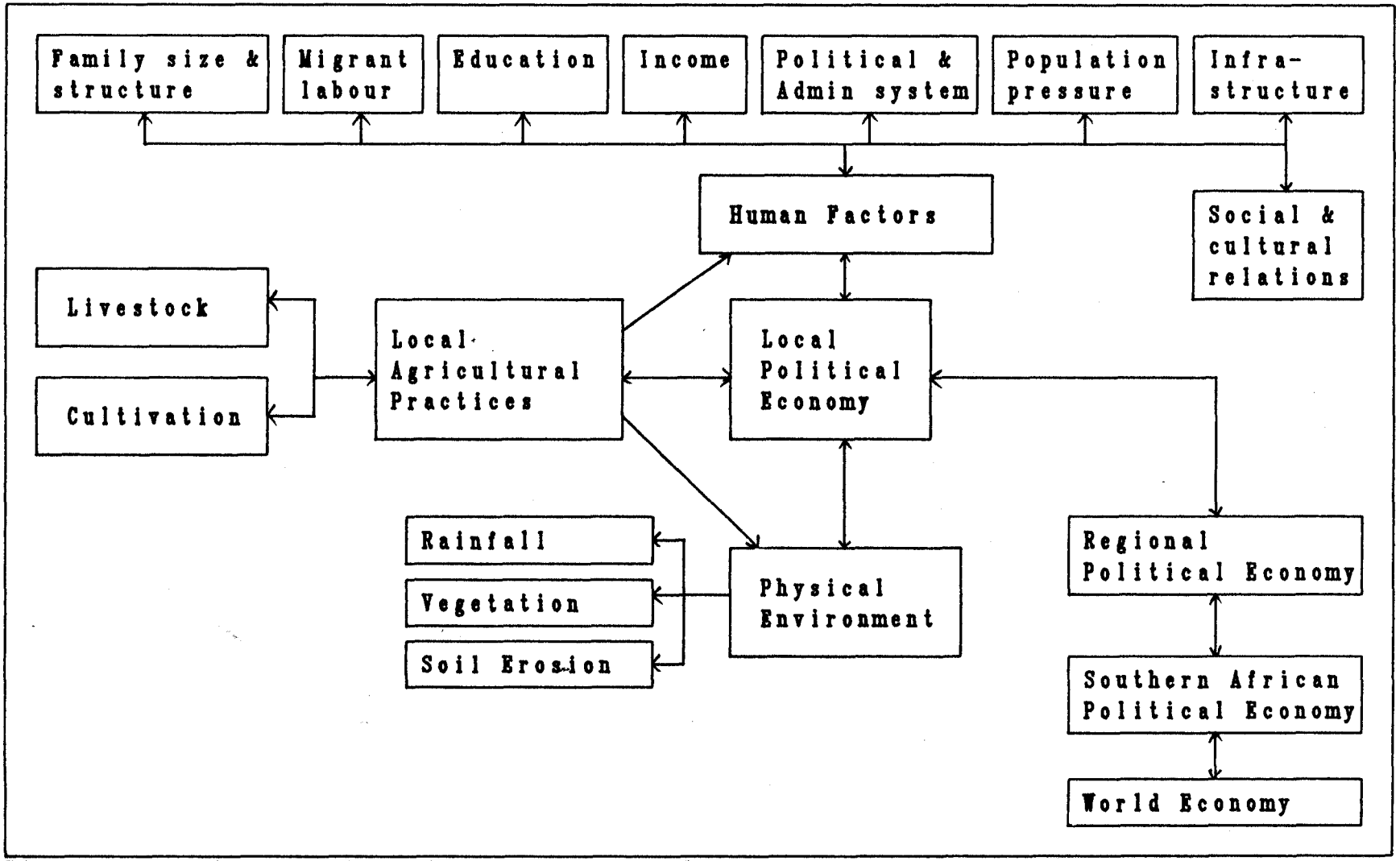

Figure 2.1 The dynamics of agricultural change

changing socio-economic and environmental conditions. Their response was therefore an important component of the analysis. As already mentioned, environmental constraints were also brought into the analysis. This entailed a consideration of the environmental consequences of the rise of peasant production during the colonial period and the impact of environmental degradation on the rural political economy.

The incorporation of such a wide range of variables in the analysis necessitated the use of a number of different sources. These included historical, anthropological and socio-economic studies; archival sources; official statistics; aerial photographs and a questionnaire survey. This variety of sources facilitated the analysis of both local and regional conditions and dynamics. Information on the general regional processes of change were obtained mainly from the literature, archival material and official statistics. The aerial photographs and questionnaire survey, on the other hand, provided data on local dynamics and the reasons for agrarian change.

2.3 Contribution to southern African historiography

The thesis attempts, through the use of the regional political ecology approach and the wide variety of data sources, to make a useful contribution to southern African agrarian historiography and South African geography. In the discussion which follows, the contribution the thesis attempts to makes to each of these fields of research is outlined. To begin with, the major trends in southern African agrarian historiography are outlined so that the thesis contribution can be assessed.

Over the last 20 years there has been an enormous growth in the number of political economic studies of agrarian historiography in southern and central Africa (Arrighi, 1970; Beinart, 1978, 1979, 1980a, 1980b, 1981, 1982; Beinart and Bundy, 1987; Bonner, 1977, 1978, 1980; Bundy, 1979; Clarence-Smith and Moorsom, 1975; Crush, 1978; 1979a, 1979b, 1980, 1988; Guy, 1978, 1980a, 1980b; Hall, 1978; Hirson, 1978; Isaacman and Isaacman 1975; Isaacman *et al.*, 1980; Keegan, 1979; Kimble, 1978; Leys, 1979; Massey, 1979; Moll, 1988; Moorsom, 1973, 1977a, 1977b; Palmer, 1977; Parsons, 1974, 1975, 1977; Peires, 1981, 1989; Phemister, 1974; Simkins, 1981; Slater, 1975; Trapido, 1976, 1978, 1980; Van Onselen, 1972; Webster, 1978, 1979; Winai-Strom, 1978; Wright, 1979; Youe, 1978). Most of this research was conducted by historians, not geographers, and was strongly influenced by neo-marxist and marxist theories. Associated with the introduction of these theories was a change in the focus of agrarian research away from colonial expansion, and settler communities to African communities and classes. The process through which African societies were incorporated into the world political economy, the rise of African peasant

production and wage labour, and processes of underdevelopment became the major focus of radical agrarian history.

A number of these critical studies have been undertaken amongst the African communities in the eastern Cape and Transkei (Beinart, 1978, 1979, 1980a, 1980b, 1981; Beinart and Bundy, 1987; Bundy, 1979; Moll, 1988; Peires, 1981, 1989). Bundy (1979) showed how peasant production for colonial markets was first stimulated by colonial interventions such as trade, missionary activities, wars of conquest, loss of land and taxation. Peasant production continued to rise until the end of the nineteenth century. After the discovery of gold and diamonds concerted efforts were made to force Africans to abandon peasant cultivation and engage in wage labour. These pressures together with the commercialisation of white farming resulted in the decline and eventual disappearance of the African peasantry by about 1930. Bundy (1979) made a significant contribution to the history of southern Africa but his work was subsequently criticised for giving the African peasantry too short a history (Beinart, 1988; Bundy, 1988). Bundy (1979) failed to examine peasant exchange relations in pre-colonial Xhosaland and consequently associated the rise of peasant production with colonial intervention. Peires' (1981) study of pre-colonial Xhosaland showed that there were relatively extensive trade relationships between the Xhosa and other African communities within the region during this period. Beinart (1982), in his study of Pondoland, also showed that colonial trade simply resulted in the reorganisation of traditional distribution networks. Peasant production and exchange were, therefore, nothing new, and the introduction of colonial trade simply redirected exchange networks.

Beinart (1988) also argued that the decline of peasant production was not as sudden and complete as Bundy (1979) suggested. Peasant production declined in the Ciskei area much earlier than in the Transkei. The decline in peasant output was also much more gradual than suggested by Bundy (1979)(Beinart, 1988; Simkins, 1981). This study of agricultural change in Shixini supports Beinart's (1988) argument and attempts to provide additional insights into processes operating at the local level. Simkins (1981) and Moll (1988) examined agricultural change in South Africa's reserves and the Transkei respectively but their studies focused on the regional trends evident in official statistics. The dynamics of these changes in specific areas remained unclear. For instance, the response of the rural population to these changes and the dynamics of class conflict were not fully examined by Simkins (1981) and Moll (1988). This current study will attempt to redress these deficiencies.

The thesis also attempted to make a contribution to southern African agrarian historiography by incorporating environmental factors in the analysis. One of the major problems with historical

and social research in general, was that the environmental impact of socio-economic and political change was not usually considered. Neither was the impact of environmental degradation on socio-economic processes. This geographical study attempts to address this problem.

2.4 Contribution to South African geography

The thesis also attempts to make a contribution to the process of 'decolonising' South African geography. Up until the 1980's much of the geographical work on South Africa was, according to Crush *et al.*(1982), a 'colonised' geography. This geography relied very heavily on theoretical developments in Europe and America and tended to "mythologize and rationalize the economic and social inequalities" of the southern African region (Crush *et al.*. 1982, p 197). Although, this study is informed by theoretical developments in Europe and America, an attempt is made to use these theories critically. Therefore, the approach adopted is a critical one which examines the political economy of South Africa. The overly optimistic views of the modernisation theorists and the pessimistic views of the dependency theorists are avoided. So are the polarised reformist (liberal) and revisionist (structural marxist) theories of the relationship between capitalism and apartheid in South Africa.

In recent years radical human geographers have begun to focus on the dominated classes in South Africa. However, in 1983 Wellings and McCarthy (1983) argued that "the 'radicalisation' of the discipline has so far served to heighten *awareness* of, but not *commitment* to, the deprived and disenfranchised classes of the region" (Wellings and McCarthy, 1983, p 340). They argued that few of these studies had examined political and class conflicts. As a result most of the political economy studies undertaken during the 1970s and early 1980s failed to view their subjects as active participants capable of influencing the nature of the social formation and the process of socio-economic development, and thus minimise the role of human agency. Since then South African urban geographers have begun to examine class conflicts in the urban environment but similar progress in the historical geography of African rural areas has been very limited. The present study attempts to make a much needed contribution to the historical geography of African rural areas by focusing the research on the response of the local community, or parts thereof, to changing socio-economic and environmental conditions and thereby incorporating human agency in the analysis.

Research on the political economy of African rural areas is also a new contribution to southern African geography. Reviews of South African geography by Beavon and Rogerson (1981) and Rogerson and Parnell (1989) indicate that very few geographical studies of African rural areas

have been conducted by human geographers. Most South African human geographers have focused on urban areas but a few historical geographers have focused on the colonial frontier and settler communities (Christopher, 1969, 1971, 1973a, 1973b, 1974, 1976a, 1976b, 1976c; Guelke, 1976; Harris and Guelke, 1977; Keinetz, 1976, 1977; Norton, 1977). Crush (1978, 1979a, 1979b, 1980a, 1985, 1988) has been one of the few historical geographers to employ a political economy approach and focus on African societies, particularly on the ways in which the colonial state incorporated African communities into the capitalist world economy and the class conflicts associated with this process. One of the possible reasons for this dearth of African rural studies is the generally accepted view that the South African peasantry had largely been destroyed by the 1930's and that the rural population relied largely on migrant remittances for their survival. They were, therefore, believed to be functionally urban or proletarianised (Beinart, 1988). Socio-economic studies of rural areas have been undertaken by geographers and other social scientists but a specific focus on agriculture has been rare. However, over 50 percent of the African population in South Africa (including the 'independent' homelands) currently resides in the rural areas and subsistence cultivation remains a significant component of the rural economy despite the decline in peasant activities. This factor alone, should point to the importance of understanding the political economy of the rural areas and the contribution made by agriculture. However, the growth in unemployment, the discrepancy between economic growth and population growth and the recent political changes in South Africa indicate that the question of land and rural development will become a much more important political and economic issue in the future. A commitment to the mass of oppressed classes in the African reserves thus calls for research into the political economy of these areas.

Chapter 3: The Agricultural History of Gatyana

3.1 Introduction

In order to understand the dynamics of the agricultural changes which have occurred in Shixini location since the 1930s it is necessary to assess preceding trends. Historians and anthropologists (Beinart, 1982; Bundy, 1979; Hunter, 1936; Hammond-Tooke, 1957; Peires, 1981; Shaw and Warmelo, 1972; Soga, 1932) who have studied the life, customs and history of the Xhosa and other Nguni people living in Gatyana and surrounding districts agree that the nineteenth and early twentieth centuries were periods of radical and rapid change. These changes stemmed from growing contact with Europeans. The Europeans imposed colonial rule and introduced money and European manufactured goods such as guns, agricultural implements, clothing, trinkets, beads and domestic utensils. They also introducted wage labour, education and exotic diseases which the Xhosa and their cattle had no protection against. All of these factors had a significant impact on the Xhosa way of life and on their agricultural practices.

It is necessary therefore, to differentiate between the lifestyle and customs of the Xhosa in the pre-colonial and colonial periods. This chapter is, consequently, divided into three sections. The first section begins by outlining the agricultural practices in pre-colonial Xhosa society immediately prior to the colonial period. Unfortunately, this discussion paints a static picture of the pre-colonial economy and cannot take into account the dynamics of socio-economic and political relations within that society. The second section considers the changes in Xhosa society wrought by contact with Europeans and colonial rule during the nineteenth century. The final section looks at the changes that occurred during the twentieth century. The discussion in these three sections focuses on socio-economic, political and environmental factors which had an impact on agricultural practices. No attempt is made to provide a comprehensive discussion of every aspect of Xhosa society and all the changes which occurred.

Historical, anthropological and socio-economic studies of the eastern regions of the Cape and the Nguni people provided most of the secondary source material for this chapter. Archival material was also consulted for the period from 1900 to 1960. The results of the aerial photography analysis, to be discussed in chapter four, are used to complement this discussion.

It is necessary at the outset to define some of the terms used in this thesis. Today the term 'Xhosa' usually refers to all the African people who originated in the Transkei and Ciskei areas. However, this is historically incorrect and is not the way in which the term is used in this

thesis. Historically the term 'Xhosa' referred to the Gcaleka and Rharabe tribes who made up the Xhosa kingdom during the eighteenth and nineteenth centuries. The Xhosa kingdom was a separate political entity from other Nguni kingdoms in the Transkei area such as the Thembu, Mpondo and Mfengu tribes although large numbers of Mfengu people were incorporated into the Xhosa kingdom in the aftermath of the Mfecane.

'Peasantry' is a term which also requires definition. A very general definition provided by Palmer and Parsons (1977) describes the peasantry as "small agricultural producers who intend to make a living by selling part of their crops or herds" (Ranger, 1978, p 101). However, there are a number of peasant characteristics which are quite specific to Africa and need to be considered. For example, African peasants have often remained deeply involved in traditional social relations and subsistence production. Many peasants also sold more than they could afford in order to pay taxes and purchase other necessary goods. Basic foods would then have to purchased later in the year during the lean season. Another unconventional feature of the African peasantry is it's co-existence with migrant wage labour. Many rural households earned income from the sale of agricultural produce and migrant earnings.

The definition advocated by Saul and Woods (1971) attempts to satisfied the criteria of comparative peasant studies and ensure that it remains congruent with African realities (Ranger, 1978, p 101). According to this definition ...

> "Peasants are those whose ultimate security and subsistence lies in their having certain rights in land and in the labour of family members on the land, but who are involved, through rights and obligations, in a wider economic system which includes the participation of non-peasants" (Saul and Woods, 1971, p 105).

However, Saul and Woods (1971) go on to limit the creation of an African peasantry to the colonial period of capitalist penetration. This aspect of their definition is avoided. The discussion which follows will show that peasants existed in pre-colonial Xhosaland and continued to exist for quite a long period after the 1930s.

It is also necessary to make a number of points about class structures and dynamics within Gatyana and other Transkei districts. There were essentially two major classes within African rural communities during the colonial and post-colonial period, namely the Chiefs and commoners. The majority of commoner households depended on subsistence and peasant cultivation along side migrant labour for their survival. However, as the analysis below illustrates, these peasants become increasingly involved in migrant labour as peasant production declined. The Chiefs and headmen were better able, through traditional patron-client relations, to secure access to land, labour and livestock. They were also able to increase their resources

and wealth through traditional dues associated with land allocations and other chiefly duties as well as from fines and differential bride-wealth payments (Beinart, 1982). Social status and power increased with wealth.

However, the socio-economic disruptions during the colonial period allowed a minority of commoners to join the ranks of the wealthy and powerful class. The destruction of the traditional political economy and its associated constraints on accumulation by commoners, together with the growth of migrant labour and peasant production allowed some commoners to increase their individual wealth. Missionary education also allowed households to obtain local jobs with the colonial administration. This enabled them to earn incomes without drawing labour away from cultivation thus giving them an advantage over other households and facilitating the accumulation of wealth. Most of these households were christian Mfengu people. However, individual households could also shift from one class to another as it moved from one stage in it's development cycle to another (Beinart, 1982). Thus a new household dependant on migrant labour might be able to accumulate cattle and wealth over time and eventually move into the wealthy and influential class once the head returned to the homestead and the children contributed to household production and income.

3.2 Xhosa society in pre-colonial times

Between 1700 and 1850 the Xhosa people lived in large extended family units scattered throughout the territory between the Sundays and Mbashe rivers (Peires, 1981)(see Figure 3.1). The household was the basic unit of economic and productive activity in Xhosa society. The typical household consisted of the household head, who was usually the senior male of his lineage in the homestead, his wife or wives, his unmarried children and possibly some poor relatives. It was only chiefs and a minority of wealthy commoners who had more than one wife. Within the household there was a strict hierarchy in which the elders ranked above the younger and the men above the women. The senior male, as head of the household, organised the productive activities of the homestead, protected it from enemies, settled domestic quarrels and secured the wellbeing of his household by communicating with the spirits of their ancestors. Each household organised its own labour and ensured that its consumption requirements were fulfilled (Peires, 1981).

The strict hierarchy within individual households was also present in Xhosa society. The Paramount Chief or king was the head of his people. According to Peires (1981) the Chiefdom could be conceptualised as a homestead with the Chief as the 'father' of his children. The

practice of government was expressed by the Xhosa verb *ukulawula* which also meant 'to dish up food'. As the father of his people the Chief had to provide refuge for offenders, the bride price for young men and assistance to all who needed it (Peires, 1981). It was virtually impossible for a household to survive outside of the Chiefdom. Drought, war and disease often undermined the productive and reproductive capacity of the household and forced them to rely on family, neighbour and chiefdom ties. If misfortunes or dangers threatened the people as a whole then the chiefdom as a whole responded. If individuals needed assistance, such as a young man needing cattle for the bride price, then the Chief provided him with loan cattle in return for services.

However, there were also relations of domination between chiefs and their people. Chiefs were always of the royal *amaTshawe* lineage and were believed to be superior to the ordinary people. There was therefore, some conflict between chiefs and commoners and this conflict usually centred around cattle, as cattle were the primary means of production and reproduction and the source of all wealth, social status and political power. As the representative of the people, the Chief was the owner of the land, its people and their property, including cattle. The people possessed the means of production, land and cattle, but they did not own them. The chief could therefore remove land and cattle from an offender if the crime warranted it. The Chief and other wealthy households were also able to secure loyalty and labour for a variety of tasks through the loan of cattle and other forms of assistance to commoners. Client-patron relationships were the norm and commoners had to pay tribute or render services to chiefs and other wealthy persons in return for assistance or favours. This was one of the important means through which goods were exchanged and labour was expropriated by the wealthy and politically powerful class within Xhosa society.

According to Peires (1981), "the political system of the Xhosa was geared towards expansion. Every bull had a right to his own enclosure; every chief had the right to his own territory" (Peires, 1981, p 53). Disputes between Chief's sons were avoided by sending them off to establish their own homesteads and chiefdoms in new territory. Each chief would take with him his own followers but the establishment of new chiefdoms also involved the subjection of foreign people. Each son within a homestead was also expected to leave his fathers homestead once he was married and establish his own homestead on a new site. This system was dependant on access to plenty of land.

It was through this process of aggressive expansion that the Xhosa kingdom gradually expanded south and westwards along the coast and incorporated the San, Khoi and Thembu people. These tribes were defeated in battle and then incorporated into Xhosa society. To begin with,

they were amongst the poorest in Xhosa society and dependant on the Xhosa people. However, they were given rights equal to the Xhosa and were able to increase in wealth and become completely integrated into Xhosa society in the long-term. At the beginning of the eighteenth century there were two main Xhosa tribes, the Gcaleka and Rharabe who had originally been one tribe under Phalo. The Rharabe later split up into a number of tribes. The Rharabe occupied the territory west of the Kei and north of the Sundays river while the Gcaleka occupied the territory east of the Kei river in the current magisterial districts of Gcuwa, Tsomo, Nqamakwe, Idutywa, Gatyana and Centane (see Figure 1.2).

The Xhosa people were pastoralists depending largely on cattle for their staple foods, milk and meat, and for clothing and utensils. They also used shifting cultivation methods to cultivate small areas of land. The crops grown included maize, sorghum, pumpkins, sweetcane and melons. Land was owned communally and held in trust by the chief. Every married man was entitled to establish a homestead and given rights of access to grazing and arable land. Each of his wives were entitled to cultivate a portion of land. The chief would settle any disputes (Shaw and Warmelo, 1972).

Homesteads had a very typical form. They were built near the tops of ridges between river valleys since this location provided shelter from the weather, good drainage and a commanding view. Homesteads usually consisted of between six and 15 beehive shaped dwellings arranged in a semi-circle around the cattle enclosure (see Figure 3.2). Usually, the household head had his own hut in the central position. Each of his wives then had a living hut and a store hut. There were sometimes also huts for the children. These additional huts were located on either side of the household head's hut in a semi-circle facing the cattle enclosure(s). The area between the huts and the stock enclosure was the yard where most of the household activities took place (Shaw and Warmelo, 1972; Peires, 1981).

The cattle and calf enclosures were the focal point of the homestead's layout, as indicated in Figure 3.2, and were central to the life and customs of the Xhosa people. Cattle provided milk and meat for food, leather for clothing, were a means of exchange and payment for wives as well as a form of wealth and social status. The more cattle a man had the wealthier he became. The quantity of cattle was important rather than the quality. Wealth also gave a man social status as he could loan out cattle to other poorer households, in return for services or labour. The borrowers would care for the loan cattle and use them to build up a herd of their own. Chiefs often used this practice to secure political allegiance and loyalty in addition to labour. Cattle were also the key to future production and reproduction in the household. Wives could only be secured through the payment of the bride price, the major component of which were

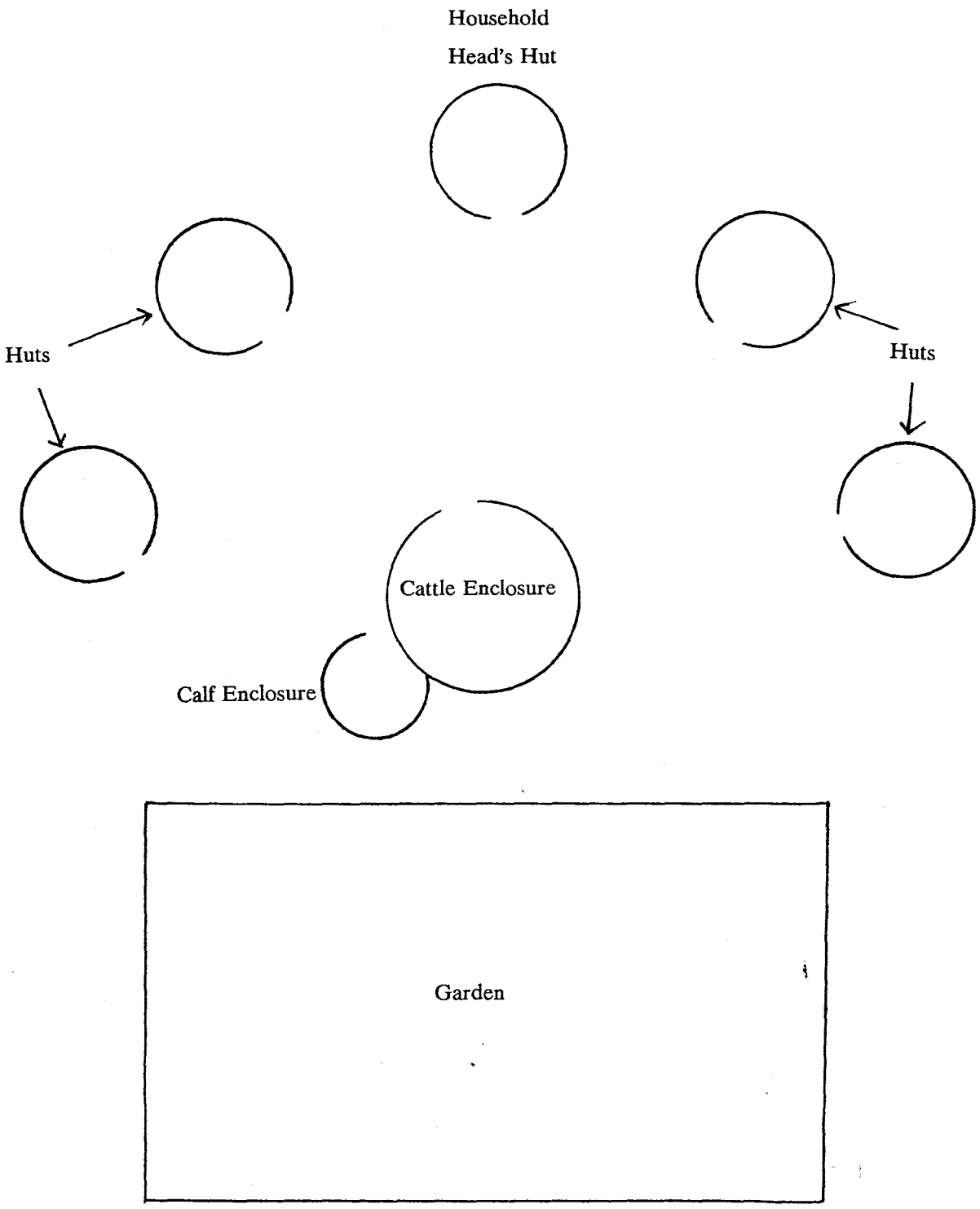

Figure 3.2 *A typical Xhosa homestead layout*

cattle. Cattle were also vitally important in religious rites as they were the means through which a household communicated with their ancestors and ensured the well being of household. It was therefore crucial for each household to have their own herd of cattle.

According to Soga (1933) the type of cattle owned by the Xhosa and other African tribes originated in North Africa and were grafted to a peculiar Portuguese breed introduced in the fifteenth and early sixteenth centuries. This breed has been described as follows: "rather flat in the barrel, having long legs, long horns variously curved, giving a small quantity of milk but rich in fat"(Soga, 1932, p 385). They were very hardy animals capable of weathering extreme changes in temperature and able to subsist on natural veld grass on which well-bred European varieties of cattle could scarcely survive. They had also built up a resistance to many of the indigenous cattle diseases. The Xhosa made no attempt to interfere with the natural breeding of their herds and this probably enhanced the development of a breed well suited to their harsh environment (Soga, 1932).

According to Peires (1981) "cattle were pastured and herded together by the community as a whole, although they were milked and stalled individually" (Peires, 1981, p 5). However, pastures were far from ideal for cattle. Most of the Xhosa territory consisted of sourveld which provided good grazing in summer but became unpalatable and declined in nutritional value in the winter. The lack of sweet or mixed grassveld encouraged the development of new techniques to enhance the pastures that were available. These included burning and overstocking the sourveld to keep it short and palatable (Peires, 1981). Modern scientific studies of sourveld indicate that this technique would have been successful as it is only in its climax stage that sourveld becomes unpalatable (Tainton, 1988). In addition to these techniques, Chiefs and wealthier communities kept cattle posts in distant areas where grazing was good (Peires, 1981). The system of loaning cattle to poorer households also allowed owners of large herds to distribute their cattle and ensure that they had adequate grazing.

The historical literature on the Xhosa provides very little detailed information on the cultivation practices amongst the Xhosa people prior to the colonial period. However, something can be learnt about cultivation methods from the adjoining Mpondo and other Nguni areas. Monica Hunter (1936), in her study of the Mpondo people provides a relatively detailed description of the early cultivation practices in Pondoland. She describes very primitive forms of shifting cultivation. The Mpondo chose to cultivate their gardens in the most fertile areas. These were firstly, the alluvial soils on the river banks, and secondly in valleys and on valley walls where bush grew. Peires (1981) mentions the cultivation of gardens on the slopes between the cattle enclosures and the water course. These were probably the same as gardens or fields on the

valley slopes that Hunter (1936) mentions. However, Peires (1981) makes no mention of fields along river banks. Fields or gardens on valley slopes would have been covered with bush and this would have had to be cleared to cultivate fields. These fields were cultivated for a number of years, depending on the fertility of the soil, then left fallow. Fields on river banks could often be cultivated for ten years while fields on steep valley walls were cultivated for two or three years (Hunter, 1936). These shifting techniques with long fallow periods ensured that relatively high yields were maintained while minimising damage to the environment.

Shifting cultivation involved the clearing of trees and bush. Once cut and cleared, the wood was piled on the stumps and burnt. This technique cleared the field of wood and roots and fertilised the soil with ash. Besides the ash from bush clearing no fertilisers or manure was used in the fields, although traditional medicines or herbs were usually burnt next to the field to ensure a good crop. Once the field was cleared, the ash was spread, the ground smoothed over and seeds sown shallowly in soil with the use of locally made spades and wooden digging sticks. Weeding was also carried out with the use of these implements.

The typical form of these implements is illustrated in Figure 3.3. The spade was a stick, usually about 60 to 90cm long and 5cm in diameter, made from a hard wood with a blade on each end. The blades were about 10 to 15cm wide. The digging stick was also made of hard wood, about 120 to 140cm long and sharpened at both ends although some variation in design was evident (Shaw and Warmelo, 1972). These implements were held with both hands and used from a kneeling or squatting position (Shaw and Warmelo, 1972). Progress was therefore slow and the area of land cultivated was limited by the availability of labour (Soga, 1932). Fields or gardens were therefore small and fenced with thornwood to protect the crops from animals. The crops grown included maize, millet, sorghum, sweetcane, pumpkins, beans, tobacco, dagga and melons (Soga, 1932; Hunter, 1936; Shaw and Warmelo, 1977; Peires 1981).

The women were responsible for cultivation although men often helped with bush clearing and planting. Each married woman was entitled to cultivate a garden within her own Chief's district as long as she did not encroach on any other woman's cultivated land. When a woman cultivated a garden on a slope between two ravines she could lay claim to the whole area between the two ravines no matter what the size of her garden. This allowed the woman to expand or change the site of her garden. There was also no legal limit to the number or size of gardens that a woman could cultivate (Hunter, 1936). Each married woman had at least one garden and was responsible for the planting, weeding and harvesting of that garden. Most of the work was therefore carried out by women. Work parties were used to assist with weeding

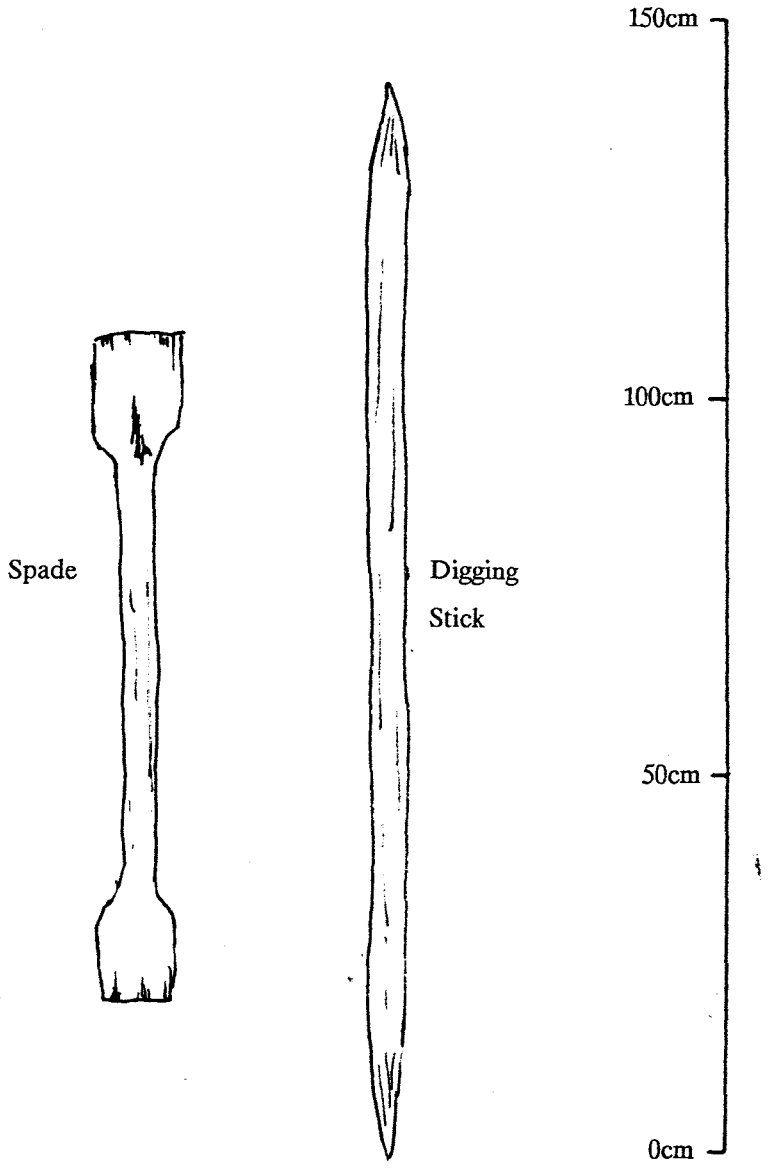

Figure 3.3 *Agricultural implements used by the Xhosa during the pre-colonial period*

and harvesting. Traditional beer, made from maize, was brewed for the workers, as payment for their assistance, and family and neighbours came to assist with the work on the day the beer matured. Participation was voluntary but anyone who called a work party together was expected to reciprocate when other households held work parties and brewed beer.

Hunting also provided an important source of meat, skins and hides but was largely popular as a sport. Before access to land became limited there were large forest areas supporting relatively abundant game. Hunting excursions involving a group of men were often organised by the Chief, or any other man who had the Chief's permission. The hunters were usually armed with clubs, spears and sometimes shields. Dogs were also used to assist in the hunt. The hunting party would usually surround the prey which was subdued as soon as the hunters were detected or attacked. Trapping was also commonly used by individual hunters. A variety of trapping methods were used, including snares and pits (Shaw and Warmelo, 1977).

Trade was also a feature of the pre-colonial Xhosa economy. According to Peires (1981) the Xhosa people traded cattle, copper, iron and beads with the Khoi people and other Nguni tribes, sometimes from very distant areas. Tobacco and dagga were also sold to inland tribes in exchange for iron, copper and beads. The distinctive feature of this trade was that it was profit oriented rather than subsistence oriented. All of these goods were a form of currency which could be profitably exchanged for each other and for goods and services, although within Xhosaland it seems that the Xhosa people did not engage in the trade of cattle, iron, copper and beads for use-value items (Peires, 1981). Thus, exchange relationships existed within Xhosa society prior to the colonial period of capitalist penetration.

3.3 Agricultural change amongst the Xhosa during the colonial period, 1800 - 1910

The analysis which follows examines the interactions between the capitalist and pre-capitalist modes of production during the colonial period. The historical evidence that is available shows that although the capitalist mode of production penetrated the pre-capitalist mode in a very coercive manner, it did not destroy the pre-capitalist mode. The social formation created by the articulation of the two modes was determined by the characteristics and changing dynamics within both modes. The class struggles within and between these two modes thus played a very important role in determining the nature of the social formation. The nature of the ecological base also played an important role. The enormous spatial and temporal variations in the interaction between the two modes and resultant southern African social formation illustrate these points. The analysis which follows attempts to show how the "destruction, transformation

and preservation" of African society in Gatyana during the colonial period was the result of "the form of capital, the internal dynamics of the African social formation and the local ecological base, all in a continuous state of flux and dialectical interaction" (Crush, 1982, p 201).

There has been no detailed historical study of the Gatyana and Centane districts for the period after the 1857 Cattle-killings. However, there are a number of detailed historical and anthropological studies of the eastern regions of the Cape Colony and Transkei (Hunter, 1936; Bundy, 1979; Beinart, 1982) which, together with Hammond-Tooke's (1957) ethnographic study of the tribes of the Gatyana district, provide enough information to get a relatively good picture of conditions and changes in the region during the nineteenth century. These are the major sources which inform the discussion below.

Although the Rharabe tribes west of the Kei river had been completely incorporated into the Cape Colony by 1835, the Gcalekas east of the Kei remained independent until the 1877-8 war. However, their independence did not protect them from colonial influences. There had been major agricultural and economic changes, associated with the eastward expansion of the colonial market economy, which would have had an impact of the remaining independent African tribes. The first of these changes was the growth of the frontier trade.

There had been trade between the colonial settlers and indigenous populations from the very beginning of the Colony's history, but, up until the early nineteenth century the British and Dutch authorities had tried to stop this trade in an attempt to prevent interaction between the Colony and the indigenous tribes. These attempts were never entirely effective but the lifting of restrictions led to a massive increase in the volume of this trade.

At first trade across the frontier was limited to traders with licences at regular fairs. The first of such fairs was the bi-annual Grahamstown fair which began in 1817. By 1824 these fairs were held three times a week at Fort Willshire near Ngqika's territory (see Figure 3.1)(Bundy, 1979). This trade involved the exchange of cattle, ivory, gum, hides and skins for beads, buttons and iron. At this stage the Xhosa were not interested in the purchase of use-value items (Peires, 1981). Their interest was mainly in currency items which could be profitably exchanged for cattle in Xhosa territory. However, the success of these fairs was short-lived as the costs of attendance became prohibitive for the Xhosa. Local supplies of ivory were quickly used up, so ivory had to be brought from further away. In addition, the living expenses of the Xhosa traders while attending the fairs were increasing and the colonial traders were collaborating to eliminate competition.

By 1830 licensed traders were allowed to cross the frontier and conduct business within Xhosa territory. They soon spread as far as Mpondoland and established regular trading stations (Peires, 1981). One of the consequences of this penetration was the collapse of the traditional bead market. The flooding of the market undermined their resale value. The demand for beads was then replaced by European manufactured goods such as blankets and iron pots. This began the process of the replacement of locally manufactured goods such as clothing and domestic utensils with European manufactured goods.

The growth of trade had a significant impact on social relationships within Xhosa society. The trade in currency items allowed wealthy Africans to increase their wealth relative to other Xhosa households. In addition, the cattle that were sold to traders were not surplus cattle. These cattle were simply removed from traditional distribution networks. Rather than loaning cattle to poorer Xhosa households in return for labour and other services, wealthy cattle owners exchanged their cattle for other forms of currency and European manufactured goods. This meant that poorer households found it more difficult to accumulate cattle and restore their herds (Beinart 1982). They thus became more vulnerable to socio-economic and environmental disasters.

Colonial trade suffered a great setback during the 1834-35 war when many traders were killed and their livestock captured. Although the Gcaleka were not directly involved in this war between the Rharabe tribes and the colonial authorities, their territory was used as a place of safety for captured cattle. When the colonial authorities defeated the Rharabe, they crossed the Kei into Gcaleka territory to recover the stolen cattle. When Hintsa, the Paramount Chief of the Gcaleka, did not reply to a request to return the stolen cattle, the colonial authorities burnt down his great place. Hintsa then offered peace and was taken prisoner. He was then brutally killed when trying to escape. His son, Sarili, succeeded as Chief and peace was concluded. The Mfengu, who had settled in Gcaleka land during the 1820s and early 30's, immediately claimed the protection of the colonial government. On Governor D'Urban's invitation, 16 000 Mfengu left Gcalekaland for the Colony and took 30 000 head of cattle with them (Hammond-Tooke, 1957; Bundy, 1979). This departure probably had both a negative and positive effect on Gcaleka society. The departure of this large number of people and cattle decreased the supply of labour and the number of cattle available for redistribution. However, it also relieved any pressure there may have been on limited land resources.

These Mfengu people were quick to adapt to their new circumstances. When they entered the Colony they were settled in the Grahamstown area and worked as agricultural labourers on white farms. This gave them experience in cultivation, ploughing, reaping and other European

agricultural technologies. By the 1840s and 1850s the Mfengu had begun to acquire land, purchase ploughs and other European agricultural equipment and were selling tobacco, firewood, cattle, milk and grain in return for cash or livestock (Bundy, 1979). The Mfengu also had a close association with the Missionaries, who advocated the development of peasant agriculture amongst the Africans, and they fought with the British forces in the 1846, 1850-53, 1858 and 1877-8 wars. They were rewarded for their loyalty with land in the Victoria East (later renamed British Kaffraria), King William's Town and the Wittebergen (later renamed Herschel) districts as well as a large area in Gcaleka territory which became known as 'Fingoland'. This area included the current Transkei magisterial districts of Gcuwa (formerly known as Butterworth), Nqamakwe and Tsomo. They also acquired large numbers of stock as war loot.

After the 1834-35 war there was a great expansion in peasant production amongst both the Mfengu and Xhosa. The Rharabe tribes within the colony suffered enormous human, stock and land losses during and after the 1835 and 1846 wars and the 'War of the Axe' in 1850-53. These losses effectively undermined their subsistence base and forced large numbers to seek temporary employment. However, a large number of Xhosa were able to avoid wage employment and remained on the land as labour tenants or squatter-peasants. Squatting came about through the enormous shortage of labour in the Colony, especially on white farms, where labour tenants were often allowed to squat. These people would agree to work for the farmer for a certain number of days per year, usually 90 days, in exchange for the right to graze stock on his land and cultivate a patch of land. A large portion of land in British Kaffraria was also held by European speculators, due to the introduction of sheep in the area and the consequent increase in the value of land. Most of these speculators were absentee landlords and rented out their property to African peasant squatters. The squatters grazed stock (including increasing numbers of sheep) on the land and cultivated maize, wheat, oats and barley. Their produce was then sold to obtain cash for their rent payments and to purchase European manufactured goods and stock (Bundy, 1979).

The Rharabe also began to use ploughs, cultivators and irrigation during this period (Bundy, 1979). The adoption of this new technology allowed the Xhosa to cultivate much larger areas of land than traditional techniques had allowed and also brought men into cultivation and transport work through the use of draught oxen. According to Xhosa customs, women are not permitted to handle cattle. The adoption of the plough therefore entailed major changes in the division of labour. Soga (1933) argues that the adoption of ploughs, wagons and sledges was a slow process amongst the Xhosa because of the radical changes in the division of labour that they entailed and due to the difficulties of learning how to break-in draught oxen. Ploughs and wagons were also far more expensive than hoes and other simpler agricultural tools. European hoes and

spades were adopted far earlier than ploughs and wagons for these same reasons. However, the adoption of sheep and the sale of enormous quantities of wool were probably the most striking features of this increase in agricultural output during the 1830s and 1840s.

There were a number of reasons for the massive growth in peasant production, as opposed to wage labour. Firstly, merchant capital dominated the colony during this period. As the white population remained small, the expansion of African demand for European manufactured goods became a neccessity for the continuation of trade and surplus extraction. Once the trade in ivory, skins and hides began to dry up traders and merchants turned to agricultural products. It was in their interests therefore to promote peasant production. Secondly, the missionaries strongly advocated the growth of peasant production amongst Africans and demonstrated European agricultural techniques for this purpose. Thirdly, the African population resisted wage labour and preferred to turn to peasant production, particularly in pastoral products. The loss of livestock and grazing also necessitated the expansion of cultivation.

However, there were significant regional variations in the growth of peasant production amongst the African population. The most significant growth in peasant production occurred amongst the Mfengu and Rharabe in the colonial territory west of the Kei. These tribes suffered the greatest land and livestock losses and much deeper social disruptions. The Mfengu were also more responsive to Colonial interventions and innovations due the their lack of strong political cohesiveness and leadership following the massive social disruptions associated with the *Mfecane*. The *Mfecane* was a period of war between the militant Zulu tribes and their neighbours which resulted in mass out-migrations from the Natal region. The Mfengu people were refugees from Natal. Across the Kei river the African tribes remained independent. They still had their land and cattle. Agricultural expansion also probably also occurred in the Transkei and Gcalekaland but on a much smaller scale (Bundy, 1979; Peires, 1981). Missionaries and traders were penetrating far into Transkei and were responsible for the spread of European manufactured goods. As mentioned previously, mission stations also illustrated the new European agricultural techniques and implements to their surrounding communities. The Thembu people were amongst the most receptive of the Transkei Nguni to European agricultural methods. Once again this was probably due to the massive social disruptions in the wake of the *Mfecane*. There were also changes in Gcalekaland but developments were much slower in this area. The Gcaleka retained their land, stock and independence and with this their subsistence base. They had also suffered very few social and political disruptions in comparison to neighbouring tribes. There are no records of traders settling in Gcalekaland prior to the 1870s but Peires (1981) mentions that traders travelled from homestead to homestead collecting corn and that ships called at Mazeppa Bay (see Figure 3.1). A Methodist mission station was also established at

Beechamwood in 1839 (Hammond-Tooke, 1957). According to Bundy (1979) "these (mission) stations were centres of trade and agricultural improvement" (Bundy, 1979, p 35). However, the exchange of money was probably not a feature of this early trade.

The Xhosa people reached a point of crisis in 1857. There had been significant social and economic changes wrought by trade, war, loss of land and deprivation. Colonial and missionary efforts had also undermined the power of the Chiefs. At this point the weary and despondent Xhosa people made a last effort to rid themselves of the colonial enemy. They slaughtered their cattle and destroyed their crops in the belief that their dead would rise, rid them of the colonial enemy and provide them with food (Hammond-Tooke, 1957; Peires, 1989). This event became known as the Xhosa cattle killing. The result was mass starvation and famine. An estimated 40 000 Xhosa people in Gcalekaland and surrounding Xhosa areas fled into neighbouring areas, particularly the Colony, in search of food and work. An estimated 20 to 30 000 died (Peires, 1989). According to Hammond-Tooke (1957), Gcalekaland was almost completely depopulated and much of British Kaffraria and Thembuland fell into European hands. The effects of the cattle-killing on the Xhosa people were the temporary destruction of the traditional subsistence economic base, increasing economic inequalities between the successful peasants and the majority of rural households and much larger numbers of men seeking periodic work in the Colony. The Mfengu, who were now deeply involved in peasant agriculture, did not respond to the cattle-killing call. So they retained the wealth they had accumulated while the Xhosa lost theirs. These economic differences were then exacerbated when the Mfengu managed to gain from the sale of grain to the colonial authorities, who subsequently bought grain to feed the starving thousands.

As already mentioned the Xhosa lost an enormous section of their land after the cattle-killings. The colonial authorities identified Sarili, the Gcaleka Paramount, as the instigator of the cattle-killing and sought to capture him. However, Sarili and his remaining followers fled across the Mbashe river into Bomvanaland. The British then built Fort Bowker in the north eastern part of Gatyana to make sure that he did not return to create further catastrophe (see Figure 3.1). In 1864, he was pardoned and the Gcaleka people were allowed to return. However, their territory was limited to the present day Gatyana and Centane districts (see Figure 1.2). They lost 45 percent of their territory to the Mfengu, including the current districts of Gcuwa, Nqamakwe and Tsomo. A British resident was also appointed to the territory. The Gcaleka returned to their destroyed homesteads in small bands with their few possessions. The game was plentiful and the pastures lush after a seven year absence of inhabitants, so their cattle herds were soon restored (Hammond-Tooke, 1957). However, the loss of such a large portion

of their land and the destruction of their subsistence base would have encouraged the growth of peasant production.

After the cattle-killing, trade, peasant production and labour migrations continued to increase in the Transkei territories but were not as firmly rooted and widespread as in British Kaffraria. The subsistence economy still supported the population to a large degree, there was little need for wage labour, and rent and taxes were lower or non-existent. In 1875, a labour agent in the Gcaleka area observed that very few Gcaleka worked for whites during this period and were able to avoid work through the sale of wool and skins. These sales paid for their few needs and their gardens supplied their food requirements (Bundy, 1979). It is important to note however, that this trade remained limited to barter as the Gcaleka had little need for cash. They were not part of the Colony and not subject to taxes. However, trade with whites increased. The quantities of European manufactured goods, such as blankets, sold to Africans were significant. Even as far as Pondoland, which was still politically independent and considered 'backward' and 'uncivilized', trade was increasing. Beinart (1982) notes that large numbers of hoes as well as many ploughs and wagons were being sold to the Mpondo during the 1860s. Cattle, grain and animal products were also replacing the hunting products that were such a significant feature of trade in the early part of the century.

Fingoland differed from the rest of the Transkeian territories in that many peasants had migrated there after the Cattle-killing and took up their peasant agricultural activities in this area. The local missionary at Gcuwa noted two years after the migrations that the area of cultivated land had increased five-fold and continued to increase every year. These peasants were sheep farmers and their activities stimulated the spread of sheep-rearing into neighbouring districts.

It was not until the late 1870s that Gcalekaland became more deeply and permanently involved in the colonial market economy. In 1870 there was war between the Thembu and Gcaleka which was sparked off by the Thembu Chief's treatment of his great wife, Sarili's daughter. The Gcaleka won this war but tensions along the frontier continued to increase after the war. There was increasing pressure on limited land resources in Gcalekaland. Sarili was increasing in strength and was estimated to have around 12 000 fighting men. Firearms were also being introduced from Natal. When conflict between the Thembu and Gcaleka erupted again in 1877, the Thembu called on the colonial authorities for assistance and were brought under colonial rule. Then later in the same year, a quarrel between the Mfengu and Gcaleka broke out and rapidly escalated into a faction fight. The colonial military forces were sent in and war erupted (Hammond-Tooke, 1957; Bundy, 1979). According to Bundy (1979) a marked feature of this

war was the "plunder and looting of the meagre resources of the Ngqika and Gcaleka" (Bundy, 1979, p 84). The 'Ngqika' were one of the Rharabe tribes. Once again their subsistence base was undermined and peasant production suffered an enormous setback, forcing much larger numbers of adult men to seek wage employment in the Colony (Bundy, 1979). The Ngqika and Gcaleka were eventually defeated and Sarili and his followers fled across the Mbashe river. The majority of the Gcaleka people, an estimated 25 000 people, surrendered and returned in small bands to their homesteads in Gatyana and Centane. They were joined by Ngqika refugees who lost large areas of land around Cathcart and Alice (Bundy, 1979). These refugees added to the growing pressure on limited land resources.

After the war Gcalekaland was more thoroughly incorporated in the Colony and its market economy. However, this did not involve the expropriation of their land. The southern Sotho rebellion around 1879 persuaded the colonial authorities to avoid appropriating Xhosa land east of the Kei for European settlement (Thompson, 1971). The officials of the Cape Native Affairs Department knew that land was in short supply across the Kei. The Cape Native Laws Commission stressed the need to avoid forcing Africans into the European mould too rapidly (Davenport, 1991). Instead their incorporation into the colony was achieved through the extension of colonial rule over the whole of Gcaleka territory and the establishment of two magisterial districts, Kentani and Willowvale, later renamed Centani and Gatyana respectively. The Willowvale Magistracy was established on the present day location of Willowvale town by the first Magistrate of the district, Mr F.N. Streatfield, in 1879. He administered the resettlement of the Gcaleka people and provided them with 'Indian corn' during the lean period after the war (Hammond-Tooke, 1957).

The major aims of the colonial state were to preserve the general structure of the traditional political economy but remove any real power from the Chiefs and ensure that the African population became more deeply involved in peasant production and wage labour in particular. According to Berman (1980) "the state was thus involved, paradoxically, on both sides of the dialectic of destruction and preservation of indigenous societies" (in Crush, 1982, p 201). A number of policies were introduced to effect these changes. Firstly, the colonial authorities deposed Sarili from the Chieftaincy, banished him from Gcalekaland and replaced him with the more co-operative Lindixiwa, one of Sarili's younger brothers. They then divided the district into 39 locations and placed co-operative chiefs and headmen in charge of each location. These Chiefs and headmen were stripped of many of their traditional rights and powers and made directly accountable to the local Magistrate. They were also paid to ensure that colonial policies were implemented in their location. Secondly, the colonial authorities imposed new taxes and controlled household access to land. The communal tenure system was maintained but as

pressure on limited land resources increased the colonial authorities limited the number of fields allocated to each household to one. Households also had to pay their taxes before they would be allocated arable land. Obviously, some time elapsed before these controls were fully operational, but gradually households lost portions of their land and found it increasingly difficult to obtain land. Beinart (1982) argues that the response of the rural population was to secure access to more fields by splitting the household into smaller units when the sons married. However, this response had a variety of impacts on agricultural production. Smaller households meant that there was less family labour available for production. Beinart (1982) suggests that this labour shortage was one of the major reasons for the disappearance of sorghum cultivation. At the same time, maize cultivation was much more suited to inter-cropping. Maize was planted at much wider spaced intervals which facilitated the cultivation of pumpkins, beans, sweet potato and sweet melon between the maize. This allowed households to maintain their yields. Another consequence of smaller household units was that migration trends began to oscillate on a seasonal basis. Often the household migrant was also the household head. His absence during the planting season would have undermined household production. Migrants would, therefore, take out six month contracts during December, January or February and return in time to assist with cultivation (Beinart, 1982; Daily Dispatch, 8 April 1935).

Another major change within Gatyana after the Magistracy had been established was the influx of traders and missionaries. According the Hammond-Tooke (1957), the only Europeans to settle in the Gatyana district prior to the establishment of the Magistracy was the missionary at Beechamwood between 1839 and 1857, the military personnel at Fort Bowker and Fort Malan and the missionaries who established a mission station at Fort Malan in 1876. Other mission stations were established from the 1880s onwards. The first trading stations in the area were established after 1879 in the Wesa, Nqabarana A and Nqabarana B locations (see Figure 1.1).

The 1880s was a period of rapid agricultural expansion and diversification within the Transkei, including the Gatyana district. Substantial amounts of grain and wool were sold. This was the period in which the African peasantry became more widespread and numerically larger, even on communal lands. The market prices for agricultural produce were high during this period due, amongst other things, to the increasing demand for agricultural produce from the new urban centres around the diamond and later the gold mines. However, the pace of change differed from region to region due to the differing influence of missionaries, colonial administrators and market opportunities and the internal dynamics of the African societies (Bundy, 1979). Fingoland and the Ciskeian areas remained the most advanced as these areas were more thoroughly undermined and disrupted and therefore more deeply involved in the Colony and its market economy. Thembuland was the next most developed peasant community. As already

mentioned the social and political disruption associated with the *Mfecane* made it much easier for traders and missionaries to penetrate this area and ensured that the people were responsive to the agricultural improvements advocated by the missionaries (Bundy, 1979). There were also some large Mfengu communities within Thembuland. Griqualand East and Gcalekaland were incorporated into the Colony during the 1880s but remained very traditional and agricultural changes took place much more slowly in these areas. They were only beginning to feel the effects of colonial taxation and controls over land allocations at this time. These areas were therefore less deeply penetrated by the colonial rule and capitalism. Pondoland was still a sovereign political state with a relatively strong traditional leadership resistant to colonial penetration during the 1880s.

The discovery of gold on the Witwatersrand intensified the economic and political processes of modernisation and industrialisation that had began with the discovery of diamonds. There was one specific feature of this modernisation process, the growing demand for African labour amongst mining and industrial employers, which had a particularly significant impact on the African rural population from the 1880s onwards (Bundy, 1979). Gold mining operations on the Reef were costly due to the low grade of the ores and the great depths at which they were found. Its extraction also required large amounts of labour, but in order to guarantee profits labour costs had to be minimised. The mines originally had great difficulties in securing an adequate, constant, cheap labour force. According to Bundy (1979), one of the reasons for these problems was that the African rural population was able to supply their subsistence and cash needs through agricultural production and the sale of some agricultural produce. It was only in times of drought, famine, stock disease and war that adequate supplies of cheap labour could be obtained (Bundy, 1979). The continued growth of peasant production thus conflicted with needs of industrial and mining capital. To remedy this situation the mining industry allied itself with white farmers and other employers to apply extra-economic measures, such as legislation, to ensure that a cheap labour supply was maintained. This legislation, which included the 1913 Native Land Act and anti-squatting legislation, was aimed at undermining the African peasantry's independence and forcing them into wage labour (Bundy, 1979). However, their strategy also sought to ensure that the bulk of the rural population remained in the reserves so that the mines and other industries would not have to provide for the subsistence needs of the migrants family or household. Mining and industrial capital had, therefore, two aims. To undermine African peasant production but at the same time ensure that the subsistence economy in the reserves continued to function.

To achieve these ends the mining companies implemented new recruiting procedures aimed at improving and increasing the supply of migrant labour to the mines. The Native Recruiting

Corporation was established in the eastern region of the Cape Colony and Transkei for this purpose. This corporation often used traders as labour agents in the rural areas and paid each agent a capitation fee or commission on each migrant they recruited. Agents were also empowered to make a cash advance of around five pounds to recruit's to pay for their transport and subsistence needs while en route to the mines. This advance was then repaid by remittances or when the recruits contract ended and he returned to his home district. Traders who acted as labour agents also found it in their interest to extend other forms of credit to rural households. Goods bought on credit were much more expensive than goods bought with cash. In addition, credit was only extended on the security of stock owned by the buyer. If the buyer defaulted on his repayment then the stock would be seized by to the trader at a huge profit as the cattle usually had a much higher monetary value than the debt (Haines, 1933). However, according to Bundy (1979) it was also "in the trader's interests to offer credit on a scale which was likely to be recoverable only through wage labour"(Bundy, 1979, p.130). Bundy (1979), argues that these procedures "amounted to systematic debt inducement" aimed at forcing the African peasantry and rural population as a whole into wage labour. However, there was one other factor, the rinderpest epidemic, which forced growing numbers of rural African people to rely on wage labour.

In the late 1890s all of South Africa's rural areas were hit by the rinderpest epidemic. This epidemic dealt peasant and subsistence agriculture a severe blow. Eighty to 90 percent of the cattle in the Transkei and Ciskei died. As indicated in Figure 3.4 cattle numbers in the Transkeian territories during this period, declined sharply. Maize yields also declined (see Figure 3.5). The addition of Pondoland data in 1900 disguises the impact of rinderpest in these graphs. This had a significant effect on the rural economy and cultivation. When their cattle died the rural African population lost their wealth, their access to credit, their oxen for ploughing and their transport medium. For the majority of the rural population the area of land cultivated was limited to that which could be hoed and any surplus produced could not be transported to distant markets. It was only the wealthier peasants, including the Chiefs and headmen, with greater resources who were able to recover almost immediately and continue with their peasant activities. These households were usually amongst the largest in the rural areas. They therefore, had more sons to send out as migrant labourers. Chiefs and headmen were also able to acquire income from "dues, fines and differential bride-wealth payments" (Beinart, 1982, p69). The majority of the population had to rely on wage labour to supply their needs. However, rinderpest did not destroy peasant and subsistence production in the long term. It was just a temporary setback (see Figures 3.4 and 3.5). Those who went into wage labour did so as a means of restoring their herds (Bundy, 1979). The restoration of the herds then allowed them to expand agricultural production (Beinart, 1982). However, recovery was

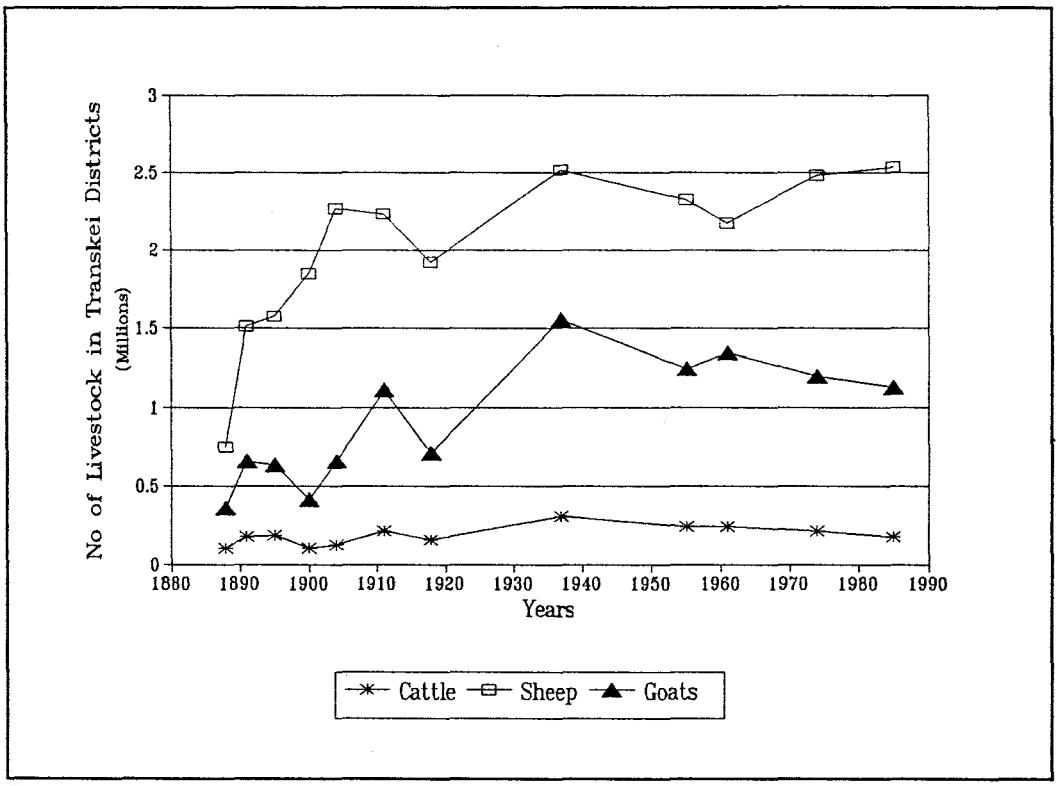

Figure 3.4 ***Changes in Transkeian livestock numbers between 1880 and 1990.***

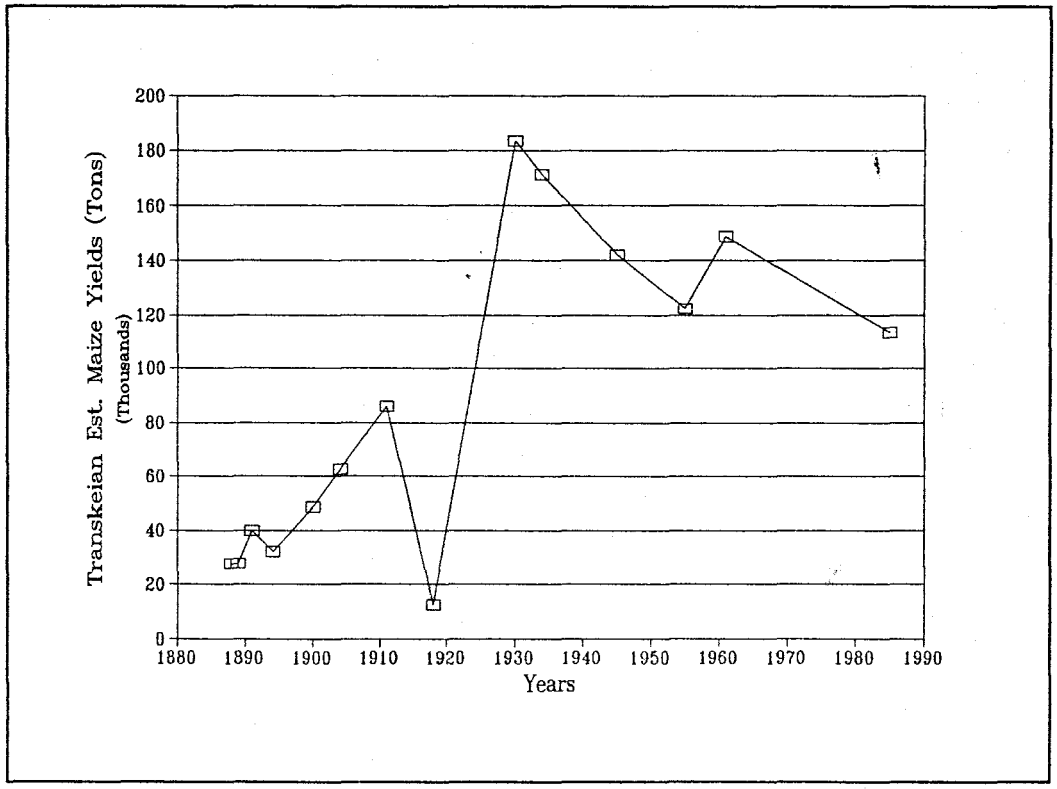

Figure 3.5 ***Changes in Transkeian maize yields between 1880 and 1990.***

slow due to a reduction in wages on the mines. The result was that the poor majority were no longer able to exercise the same degree of independence that they had enjoyed before the rinderpest epidemic. Participation in migrant labour became essential for the majority of households, even amongst the wealthy peasants. Migrant labour, rather than undermining subsistence and peasant production became essential to it's recovery and continuation.

Despite these difficulties African agricultural output continued to increase. The extent of the difficulties encountered varied from region to region. Conditions were very poor in the Ciskei due to the enormous population pressure in this area, but in the Transkei more and better land was available. Transkei also had a wetter climate and lower population densities (Bundy, 1979). The result was that the peasant agriculture in the Transkei continued to prosper during the 1890s. Sales of wool and grain continued to increase. However, the lack of any railways in the Transkei made it difficult for Transkeian traders to sell the maize profitably on distant urban markets. In response to this difficulty Transkeian traders refused to pay for maize in cash, only accepting it for payment in kind (Bundy, 1979). This change in the nature of payment did not destroy the trade in grain but it forced African peasants to rely more heavily on migrant remittances for the payment of taxes, rents and purchases. Despite the lack of external markets for African maize, traders continued to purchase local grain harvests. They then stored it and resold it again at much higher prices during the lean seasons. They also sometimes sold it to traders in other Transkeian districts when shortages were experienced. There has been much speculation and debate around this seemingly irrational behaviour of rural producers. Bundy (1979) sums up the reasons for such behaviour as follows:

> "The sales after harvests took place because cash or goods were needed - to pay debts, to meet tax obligations or simply to provide consumer demands that had become imperative. Storage facilities were inadequate to allow 'banking' the grain until it could be off-loaded at more favourable rates, and more sophisticated storage or marketing devices were ruled out even for substantial peasants by the dearth of private or public investment in the region and the growing inability of peasants to accumulate capital" (Bundy, 1979, p 132).

Haines (1933) also argues that those who sold grain were not always the people who bought grain. Wealthy peasants sold grain and poor peasants and subsistence farmers bought it.

3.4 Agricultural change amongst the Xhosa during the post-colonial period, 1910 - 1985

The South African political economy changed quite considerably from 1910 onwards. The economy was industrialising and modernizing at a rapid rate, increasing the demands for labour

and changing productive relations, particularly in agriculture. Capital was redirected towards the mining industry on the Witwatersrand and infrastructural investment was concentrated on routes between the mines and ports and in white farming areas. African reserves were largely bypassed by the main transport and communication networks. These changes had a negative effect on the economic development of the African reserves.

There were also significant political changes. Mining and industrial capital became a major political force to the detriment of merchant capital, and campaigned for policies aimed at destroying the African peasantry and securing a cheap labour supply (Bundy, 1979: Wolpe, 1972; Freud, 1984). White farmers also played a significant political role, particularly after self-government and Union in 1910. Self-government removed British control over government policies and gave the white population full political control. White farmers took advantage of these changes and campaigned for legislation to protect their own interests. Their polices effectively undermined the competitive position of African peasants and ensured the growth and protection of the white farmers. The African population on the other hand lost power to these other interests. African voters were gradually removed from the voters rolls while in the reserves the focus on traditional pre-capitalist political relationships were preserved in such a manner that the real centre of political power was moved from the Chiefs to the South African administration. As mentioned earlier, these polices formed part of the broad policy to destroy and preserve the pre-capitalist political economy within the reserves. Apartheid legislation during the second half of the century represented further attacks on the African population. They were denied all rights of residence and citizenship in white South Africa, they were confined to the reserves and their political organisations were repressed.

All of these changes had a significant effect on the political economy of the African reserves. However, the effects of such changes on the Gatyana district and the response of the Gatyana population was far from simple. The discussion which follows attempts to elaborate on the dynamics of the changes which occurred during the twentieth century. The discussion is divided into two distinct periods of government policy. The first period, 1910 - 1948, was largely one of indirect rule during which there was very little active intervention in the reserve economies. The second 'apartheid' period, 1948 until 1985, marks a change to direct rule and active intervention in the reserve economies. The discussion of each period will begin with a look at the most influential conditions and relations at a regional level and then moye on to a consideration of the local dynamics within the Transkei and Gatyana in particular.

3.4.1 Regional dynamics 1910-1948

Until the mid 1940s state intervention in the rural Transkeian economy was limited to regulations on trading and missionary activities, the consumption of liquor, the use of forests and thatching grasses, the use of roads, the eradication of noxious weeds and veld fires, and East Coast Fever regulations (Moll, 1988). Many of these policies seem to have been aimed at preserving the traditional political economy and conserving local resources. These regulations, issued by proclamation from the Department of Native Affairs, were implemented by the District Magistrates and the appointed headmen within each location. It is clear from the minutes of the Willowvale Magistrate's meetings with headmen that rural communities and their appointed representatives were simply notified of government regulations. Headmen were not consulted about policy, only told to see that it was implemented in their locations. The Magistrate's records also show that Magistrates often experienced great difficulty in getting headmen and local communities to co-operate with government regulations. For example, there was particularly widespread opposition to quarantine and dipping regulations. Efforts by magistrates to prevent headmen and chiefs from taking tribute from their people when allocating land was another frequent problem. How effectively these regulations were implemented is thus very questionable. It is also evident that although there was a growing concern in official circles about soil erosion, growing rural poverty and increasing urbanisation in South Africa and many other African countries, no concerted attempt was made to change traditional socio-economic activities within South Africa's reserves until the 1940s. However, these concerns about soil erosion in the African reserves seems to have been overstated. There was little or no official concern about soil erosion in the Gatyana district during the first half of the twentieth century. Even in 1955 the Magistrate reported that the Gatyana district was relatively free of soil erosion (Cape Archives, hereafter CA, Willowvale Magistrate, hereafter 1/WVE, Vol. 82, No. 8/5/1)[1]. Beinart (1984) argues that these concerns seemed to have developed originally from high erosion rates evident in settler agriculture and fears that South Africa could turn into another 'dust bowl'.

'Betterment' policies were the first active state intervention in the reserve economies. The main aims of betterment were the prevention of soil erosion and the development of the African reserves. As in other African countries, the officials and experts identified poor land-use and agricultural practices as the cause of soil erosion (Baker, 1984; Blaikie, 1981; Anderson and Millington, 1987; Otieno and Rowntree, 1987). The solution was purely technical in nature. It was only considered necessary to change land-use practices in rural areas. Betterment planning sought to reorganise rural land-uses into separate residential, arable and grazing areas. Settlement was concentrated into villages, arable land was limited to suitable areas with gentle slopes and low erosion risks and grazing areas were to be divided into fenced grazing camps. Associated with betterment were a range of anti-erosion measures such as contour ploughing,

grass strips, contour banks, and livestock improvement schemes. The livestock improvement scheme and its associated legislation attempted to reduce stock numbers in the African reserves and to improve the quality of the stock. It was hoped that these policies would prevent further erosion and land degradation and promote agricultural development (De Wet, 1986; De Wet and McAllister, 1983).

During the mid 1930s the state initiated betterment land-use planning on 'Native Trust' land, which the state had purchased for incorporation into the African reserves. In the African reserves no comprehensive planning was initiated at this stage although anti-erosion measures and livestock improvement schemes were imposed (Moll, 1988). It was not until the 1940s that betterment planning, conservation works and livestock improvement schemes really got under way in the reserves. In 1940 these policies were to be applied to the whole of the Transkei. However, limited funding, war-time administrative staff shortages and local opposition seriously inhibited progress. By 1945 only 114 of the 800 Transkei locations had been planned. Livestock improvement programmes had even less success. Only three wards in the Gcuwa District had completed culling operations by 1945 (Moll, 1988). Each location within a district was divided into an number of sub-wards with their own headmen. Despite these problems, betterment policies were implemented with renewed vigour in the post-war period.

The major concerns of the state in the post war period were the tension between the increasing labour demands of mining and agriculture and growing African political activity and resistance, particularly in the urban areas. The report of the Native Laws Commission in 1948, otherwise known as the Fagan Commission, proposed three measures that would ensure an adequate supply of African labour but also limit African urbanisation. These measures included the acceptance of a permanent urban African population, the centralised regulation of labour in Pretoria and measures to "maximise a 'settled' reserve population" (Moll, 1988, pp 26). Efforts to maximise the settled African reserve population included the renewed implementation of betterment, then referred to as reclamation, and increased expenditure on soil conservation and reclamation measures. Given that there were already too many people in the reserves, betterment policies aimed at creating two distinct rural African classes, a "viable full-time rural peasantry" and a "stable rurally-situated migrant proletariat" (Moll, 1988, pp 36). This would mean that a large portion of the rural African population would lose their access to grazing and arable land. However, no effective method of creating these two classes was found. Progress was also hampered by opposition. A variety of rural political structures were formed to resist betterment and livestock culling in particular (Beinart, 1984; Beinart and Bundy, 1987). According to Moll (1988)

> "these movements did succeed in slowing down rehabilitation and in bringing its most hated element, cattle culling, to a halt. The widespread struggles, however, remained small and localised, and tended to be 'defensively rebellious' rather than forward-looking, with little attempt at peasant-proletarian alliances" (Moll, 1988, pp 34).

One of the major problems with betterment planning was that it was imposed from above without much consultation with the communities involved (De Wet, 1986; De Wet and McAllister, 1983). Another major flaw was the simplistic identification of local land-use practices as the cause of environmental degradation. The complex web of socio-economic and political relations which shaped local land-use practices were not brought into the analysis. The authorities and experts therefore failed to identify the real causes of land degradation and appropriate solutions (Baker, 1984; Beinart, 1984).

There was one major economic change during the first half of the twentieth century, namely the commercialisation of white agriculture, which had a significant negative effect on African peasant production. The commercialisation of white agriculture had begun, on a very small scale, in response to the new market and transport opportunities created by the discovery and exploitation of gold in South African during the 1890s. However, these changes did not become widespread until after the Anglo-Boer War of 1899-1901. This lagged response was due to both the international drop in the prices of agricultural produce during the 1873 - 1896 depression and the associated lack of capital for agricultural investment. In addition, grain could be cultivated in the United States and imported more cheaply than it could be produced in South Africa. Local conditions also inhibited the commercialisation of white agriculture. White farmers found it difficult to secure labour at the low wages they offered as the majority of the African population were able to engage in subsistence and peasant agriculture on either their own land, communal land or as tenants and squatters. White farmers also found it difficult to compete with the more intensive cultivation conducted by African peasants and peasant-squatters who, according to Bundy (1979) "devoted a far greater proportion of time and land to agricultural purposes" (Bundy, 1979, p 113). African peasants also had lower consumption costs and employed family labour which reduced the need for wage labour (Bundy, 1979, p 112-13). Finally, white farmers had difficulties in securing capital for technological and productive improvements as mercantile interests controlled the credit and banking facilities (Bundy, 1979). In addition to all these problems the white farmers also had to compete with the mining industry for labour after the gold discoveries.

There were some moves towards the commercialisation of white farming and the intensification of stock farming prior to 1899. These processes only really got off the ground around 1900, but particularly after 1910. There were a number of factors which initiated commercialisation amongst white farmers. Firstly, the widespread development of railways, particularly in white farming areas, gave them a competitive edge over peasant farmers who relied on ox-wagon transport. Secondly, improved international and regional markets. Thirdly, "a massive programme of subsidies, grants, and other aid" to white farmers procured through their greater political representation. Finally, the alliance between white farmers and the mining industry to secure a cheap labour force improved their competitive position (Bundy, 1979, p 116).

The commercialisation of white agriculture especially after 1907, had a number of detrimental effects on the African peasantry. Firstly, as commercialisation in white agriculture progressed so did its productivity and the value of their land. This encouraged whites to move away from labour-tenancy, share-cropping and land renting practices and to promote the introduction of anti-squatting legislation. In addition, the spread of fencing also reduced white farmer's labour needs. Irrigation enhanced the productivity of their land and encouraged white farmers to cultivate their land themselves rather than rely on rent and/or labour from less productive squatters. All of these factors resulted in the eviction of large numbers of squatters from white farms, reducing the number of squatters in the eastern districts of the Cape from 40 000 to 7000 between 1909 and 1931.

The introduction of other, racially discriminatory legislation, such as tax relief, rail subsidies, special credit facilities in addition to many other forms of assistance improved the competitive position of white commercial farmers vis-a-vis African peasants. These advantages were later strengthened by legislation such as the 1913 Land Act which was aimed at reducing or minimising the opportunities Africans might have had to engage in peasant or commercial agriculture (Bundy, 1979). Similar trends were also evident in other African colonies (Otieno and Rowntree, 1987; Blaikie and Brookfield, 1987). The Smuts government also introduced agricultural control boards during the 1930s which allowed white farmers to control their own affairs and stabilise the prices of agricultural produce (The Mealie Control Scheme, 1939). On the whole the aim of these control boards was to subsidies the small poor white farmers and "keep them on the land" (The Mealie Control Scheme, 1939). These control boards were also dominated by small white farmers who acted to protect their own interests at the expense of the African peasantry.

The 1913 and 1936 Land Acts, which initially limited African reserves to seven percent of South Africa's land but later increased this area, also had a negative impact on the African peasantry.

This legislation served to confine the rural African population within the African reserves and prevented Africans from acquiring land outside the reserves. Together with the anti-squatter and labour tenancy legislation, this legislation had the effect of putting increasing pressure on the limited resources within the congested African reserves. The Tomlinson Commission estimated that the African population in the reserves increased from 2.7 million to 3.3 million between 1919 and 1934 (Moll, 1988). Ultimately large numbers of Africans were forced to move off the land and seek permanent urban employment. Thus the large landless class increased in size quite dramatically from the 1890s onwards (Bundy, 1979). The majority of the African rural population came to rely quite heavily on wage employment from this time onwards. The land that remained in African hands was divided and subdivided until the units became too small to supply even subsistence needs. The pressure on land resources also led to the cultivation of large areas of marginal land and the reduction of fallow periods. Every inch of available land was put under the plough until it could produce no more (Bundy, 1979). However, the extent of the difficulties varied from region to region.

3.4.2 Local dynamics 1910-1948

Between 1890 and 1910 it is evident from estimates of Transkei maize yields and cattle numbers that the agricultural output from African small-holders in the Transkei was increasing steadily (see Figure 3.5). Trading activities expanded quite rapidly in the Gatyana district, stimulated by the growth in agricultural output. There are few records available for the Gatyana District until around 1910 due to a fire in the Magistracy building some time between 1900 and 1910. However, it is clear that there was a very rapid growth in trading activities within Gatyana between 1890 and 1920. By 1921 there were 34 traders in the Gatyana districts most of them located in the locations. These included three traders in Willowvale town one of whom operated a hotel. After 1920 there seems to have been no significant increase in the number of traders. There were still only 36 traders in the Gatyana District in 1951. These traders sold European manufactured goods in exchange for cash and local produce. The barter trade seems to have been quite significant and persistent despite legislation to restrict it. Prior to the 1920s rural residents sold their produce to traders and often received a metal token from the trader allowing them to purchase goods from that trader at a later date. In 1922, these metal tokens which were used as IOU's were made illegal. However, this legislation did not destroy the barter trade. Further legislation was introduced in 1947 which made bartering illegal but it continued in rural areas like Gatyana until the 1960s at least (CA, Chief Magistrate Transkei, hereafter CMT, Vol. 3/1048, No. 9/j)[2].

As is illustrated in Figure 3.4 and 3.5, the long term growth in agricultural output within the Transkei suffered a serious setback around 1911 when the East Coast Fever epidemic infected the Transkei. In this second epidemic African cattle herds were decimated and the peasant and subsistence agricultural economy was undermined. Recovery from East Coast Fever was also difficult due to the lingering nature of the disease and the effect of quarantine regulations imposed on infected areas. It was only in the 1930s that the East Coast Fever regulations were relaxed. Reduced incomes from the sale of agricultural produce and growing debt made it necessary for greater numbers of men to participate in migrant labour for much longer periods. This is evident in the migrant labour figures for the mines. In 1896 the Transkei supplied 10 percent of the total workforce on the Reef. By 1906 this proportion had increased to 13.6 percent and by 1912 it had risen to 40 percent. After that it levelled out at around 33 percent by 1916 (Bundy, 1979). It became common during this period for men to migrate annually.

The East Coast Fever epidemic only served to further stratify African rural communities within the Transkei. By 1914 five percent of the population owned 33 percent of the cattle (Bundy, 1979). In addition there was widespread debt amongst rural households which had been growing since the 1890s (Bundy, 1979). The system of extending credit and cash advances by traders and recruiters began to grow rapidly in the 1890s with the new recruiting procedures initiated by the mining companies. By 1906 it was the opinion of the Umtata Magistrate "that a large proportion of the Natives in this and other districts are virtually insolvent" (Bundy, 1979, 131). This insolvency would have forced large numbers of African peasants and landless residents into wage labour.

The Gatyana Magistrate provides a relatively good account of agricultural practices amongst African small-holders during the 1920s. This was the period when the Transkei was beginning to recover from the East Coast Fever epidemic (CA, 1/WVE Vol. 5, No. 68)[3]. Both gardens and 'lands' were cultivated. Each tax paying homestead was allotted one arable plot averaging in size at around 2.996 hectares, but the size of land holdings varied considerably. Some households had as much as 4.0468 hectares but usually did not cultivate all of this land. Boundary disputes were also common during the 1920s and 1930s indicating a shortage of land (CA, 1/WVE Vol. 13, No. 2/21/2)[4]. However, not all households were regular taxpayers. The Willowvale Magistrate had great difficulty in collecting taxes in his district. In fact, Gatyana was one of the worst districts for unpaid taxes. The result was that a large number of households were not able to get access to fields.

According to the Magistrate, one-furrow ploughs, pulled by four oxen, were in common use at this stage but hoes were used by households with no access to ploughs. The Magistrate was not

aware of any co-operative cultivation practices. However, Hunter's (1936) study of the Mpondo people indicates that co-operative work parties were in operation at this time. There were very few cattle and they were in very poor condition during the early 1920s due to the East Coast Fever epidemic. The magistrate estimated that there was only one beast to every person in the Gatyana district. Given the inequalities within the rural communities a large number of households would have had few or no livestock. The result was that ploughing was less frequent and very difficult, especially in the early spring, and tended to be very shallow. These conditions had a negative impact on yields.

Yields were also undermined by other aspects of local cultivation practices. The maize seed was mixed and degenerated and any new strain introduced was quickly hybridized. Seed was usually broadcast over the soil before ploughing. The seedlings were not thinned out and weeding was left very late. Very few cultivators were in use. Artificial fertilizers were also not used. Manure was used on gardens, but no mention was made of the manuring of fields'. All of these factors combined to limit yields, especially in fields. Other crops, such as beans and pumpkins were intercropped with maize and this practice would have helped to maintain yields and inhibit erosion. The Magistrate mentions that beans were known by African small-holders to be 'maize medicine' (1/WVE, Vol. 5, No. 68)[5]. The average yield was approximately three 200lb bags of maize per morgen. However, these yields varied from household to household and from year to year. After a good season there was a substantial trade in maize but after poor seasons maize had to be imported. It is not clear what other crops were cultivated but tobacco and kaffir corn were commonly cultivated. However, kaffir corn was not a popular crop in Gatyana due to its susceptibility to birds and the high incidence of late spring rains.

There were a number of factors which inhibited economic recovery from East Coast Fever in the rural areas of Transkei. Natural population growth, restricted boundaries and an influx of refugees from white farming areas resulted in increased pressure of local land resources. The economic depression during the 1920s reduced migrant wages and incomes from the sale of grain, wool, hides and skins. The tobacco trade, which had been quite significant before the 1920s also suffered quite a major setback in 1921 and again in 1932. An effective tax on tobacco sales was imposed through the introduction of an excise duty on Tobacco. The Magistrate's records indicate that this tax largely destroyed the tobacco trade (CA, CMT Vol. 3/1048, No 9/J)[6]. East Coast Fever quarantine regulations also inhibited recovery by restricting trade in cattle. Apart from slowing down the recovery from East Coast Fever, these regulations forced large numbers of men to migrate in search of wage employment (CA, 1/WVE Vol. 4, No. 46)[7].

However, many rural small-holders in the Transkei were able to minimize their need for wage employment and increase their income by investing in sheep and wool production. Figure 3.4 shows that the number of sheep in the Transkei increased enormously after the East Coast Fever epidemic. Despite low wool prices, the enormous increase in wool production helped many households to avoid migrant labour or limit it to short periods. Employers continued to find it difficult to recruit labour in the Gatyana district except after a drought or other disaster (CA, 1/WVE Vol. 87, No. 7/9/1)[8] as found by Bundy (1979). One of the features of the late nineteenth and early twentieth centuries was that the supply of labour to the mines corresponded more closely with drought, war and stock diseases than with demand. Evidence given to the Native Labour Commission indicates that the supply of labour was also influenced by the annual agricultural cycle. The supply of labour was usually very good between January and March once the ploughing had been completed, but was low between May and October. The average length of contracts on the mines at this time was four to six months. This length of contract allowed migrants who left for work between January and March to return again in time to assist with cultivation and ploughing (Daily Dispatch, 8 April 1935)[9]. It is clear that the mines had enormous problems in maintaining an constant supply of labour throughout the year and had implemented a quota system to counteract this problem. Apparently this system had succeeded in increasing the supply of labour from the Transkeian territories and in reducing the fluctuations in supply. However, evidence given to the Native Labour Commission in 1935 indicates that the supply of labour continued to oscillate.

The cattle mortalities in the Gatyana district were very heavy during the East Coast Fever epidemic although not as great as during the rinderpest epidemic in the 1890s. The government implemented strict quarantine regulations and an extensive dipping program aimed at preventing the spread of East Coast Fever and at eventually eliminating it. The construction of dipping tanks in the Gatyana district began around 1912 and by 1922 16 tanks were in operation throughout the district. One of these tanks was constructed at Ngadhla in the Shixini location (CA, CMT Vol 3/835, No. 572-26)[10]. However, government efforts to eradicate East Coast Fever were frustrated and delayed by shortages of supplies and skilled dipping foremen (CA, CMT Vol 3/835, No. 572-26)[11] . Illegal stock movements from the inland areas to the coastal districts (CA, 1/WVE Vol. 1)[12] and opposition from the African small-holders (CA, CMT Vol 3/835, No. 572-26)[13]. Opposition of this nature seems to have been widespread in South Africa's reserves but also evident in other African countries (Beinart, 1984; Otieno and Rowntree, 1987). The result was that East Coast Fever remained prevalent for quite a long period and quarantine regulations, which remained in force until the 1930s (CA, 1/WVE Vol. 7, No. 2/2/2)[14], prevented the import of new livestock. This meant that recovery was slow. One of the factors which assisted recovery was that quarantine restrictions kept the price of cattle

low and made it easier for households to build up their herds. These regulations prevented the export of livestock and thus aided the build up of livestock and eventually led to overstocking. In 1919 the Gatyana Magistrate estimated that the number of cattle in the Gatyana district was around 27 467. By 1936 this number had increased to 83 000 and the cattle trade was restored (CA, 1/WVE Vol. 87, No. 7/9/1)[15]. Even by 1930 the Magistrate complained that the district was overstocked (CA, 1/WVE Vol. 7, No. 2/2/2)[16] and a new campaign was initiated to promote stock sales (CA, 1/WVE Vol. 82, No. 8/4/1)[17]. It was mainly through the investment of migrant wages into cattle that herds were restored.

Figures 3.4 and 3.5 indicated that agriculture in the Transkei had recovered by 1930, largely due to the investment of migrant earnings in cattle. In fact, crop yields and stock numbers increased far beyond their pre-East Coast Fever levels. However, much of this increase in output was related to increasing population growth. As already mentioned, much marginal land was brought under cultivation during this period. However, the disruption of shifting cultivation methods brought about by increasing pressure on limited land resources and the minimal use of fertilisers and manure, meant that high production levels could not be maintained. The fertility of the soil, especially on marginal land, would have declined significantly within a few years (Lal, 1974). It is not surprising therefore that agricultural output in the Transkei declined from the 1940s onwards (see Figures 3.4 and 3.5). Overstocking, and the enormous increase in sheep numbers in particular, also reduced the carrying capacity of the grassveld causing a decline in cattle and sheep numbers (see Figure 3.4). By the mid 1930s the trade in skins and hides was also on the decline (Daily Dispatch, 8 April 1935)[18].

However, land degradation was not the only factor reducing agricultural output levels in the Transkei. In the mid 1930s there were three major setbacks for peasant and subsistence production. Firstly, there were enormous tax increases during the 1930s which pressurised rural households to increase their income from agricultural produce or turn to wage labour. Secondly, there was a very severe drought in 1935, believed to be the worst since 1886, together with a locust plague. The maize crop failed and stock losses were heavy. The demand for maize increased dramatically and necessitated large imports. Conditions were so bad that regional authorities had to provide subsidised maize to the Gatyana population.

The third setback was the introduction of the Mealie Control Scheme in 1936. The Mealie Control Board, dominated by white small maize producers, implemented a scheme during 1936 aimed at controlling the maize trade and increasing the local retail price of maize by 60 percent. This was achieved through the imposition of a 4/- levy on each bag of mealies sold by producers which was to be paid to the Mealie control board. The board would then use the funds raised

from this levy to subsidise the maize producers, especially the small producers. However, small scale African producers, sold such small quantities of maize that their sales were to be dealt with collectively rather than individually. Consequently, the levies collected from the sale of maize by African producers were to be pooled and used by the Mealie Control Board "to such purposes as the Board may, in consultation with the Department of Native Affairs, consider to be to the advantage of producers of mealies in the Native areas" (The Mealie Control Scheme, 1939, p 176). The result was that African producers did not benefit in the same immediate and individual manner as the small white farmers. In fact the scheme had a direct negative effect on maize trade within the African reserves. Traders objected to the scheme and were reported to be refusing to purchase maize from African small-holders. The increase in the purchasing price of maize was also expected to encourage African maize producers to store the maize themselves rather than sell it to traders and buy it back later at much higher prices. However, after much opposition by the traders and the Chamber of Mines, certain concession were made to spread some of the benefits to African producers. These concessions had little positive effect on peasant agriculture during and after the drought. African small-holders in Gatyana had little or no maize to sell and paid high prices for the maize they purchased.

Once again the effect of these setbacks was to increase the number of migrants seeking wage labour. Evidence given to the Native Labour Commission during this period repeatedly refers to the increase in the supply of labour within the Transkei around 1935. Some recruiting agents expected the supply of labour to increase by 20 to 30 percent (Daily Dispatch, 8 April 1935)[19]. Most migrants recruited in the Transkei chose to defer their wages through the Native Recruiting Corporation (Daily Dispatch, 8 April 1935)[20]. According to this system, migrants received a small allowance while they were working on the mines while the rest of their wages were saved up and paid to them when their contract ended and they returned to their homes. This system helped to prevent migrants from absconding and also ensured that most of their wages were brought home to the rural areas. Migrant wages were, therefore, a substantial source of income for rural households.

After the implementation of the Mealie Control Scheme the demand for local storage facilities for surplus maize became urgent and widespread. Traders did not have enough storage space to store all the local maize they purchased until the lean winter and spring period. They also had problems storing Transkeian maize, especially in the Coastal areas, as the maize was often harvested too early and was too wet. These problems encouraged the traders to export any grain that they could not store themselves and then import maize from the Union when their own stores were depleted. The result was enormous traffic in maize and long delays in the importation of grain. This state of affairs made it difficult to obtain maize at short notice and in

times of severe drought and famine. The traders, civic association and local authorities in the Transkei began campaigning for the construction of local storage facilities for maize during the 1940s. Local storage facilities would allow surplus Transkeian maize to remain in the Transkei and would ensure that adequate supplies of maize were available to traders during droughts. Imports of expensive Union maize would then be minimized and long delays in delivery would be avoided. The Mealie Control Board and Native Affairs Department eventually agreed to these proposals in 1950 but it was not until 1960 that these storage facilities were operational (CA, CMT Vol. 3/1043, No. 9B)[21]. After the implementation of the Mealie Control Scheme the maize trade continued but was beset with problems of Control Board restrictions, high prices and long delays right up until the 1960s. It is evident from the records of the Gatyana Magistrate and the Chief Magistrate of the Transkei, that these problems led to a gradual decline in local trade, an increase in imports and a decline in exports as quality controls in the Union undermined the competitive position of Transkeian maize. In the Gatyana district the maize trade was still flourishing during the mid 1940s even in bad years (CA, CMT Vol. 3/1043, No. 9B)[22] but by the late 1950s and early 1960s it was evident that African small-holders were selling less maize and relying more heavily on migrant remittances to purchase maize imported from the Union for their basic food requirements. Even in relatively good years large imports of grain were necessary (CA, CMT Vol. 3/1043, No. 9B)[23]. We can infer from this information that the majority of households were not able to provide for their subsistence food needs by the early 1960s. In addition they earned very little if any income from the sale of agricultural products and relied more heavily on migrant remittances and wages for cash income and the provision of their subsistence needs. However, there were major changes in state policy during the 1950s and 1960s which had a further negative impact on the agricultural output in rural Transkei.

3.4.3 Regional dynamics 1948-1985

'Native' policy changed significantly after the Afrikaner Nationalist Party came to power in 1948. From the 1950s onwards policy shifted towards apartheid, that is the legislated separation of the different ethnic groups, the exclusion of Africans from the permanent urban population, and the restriction of all forms of African political activity and representation within the reserves. The first ten years of apartheid was a period of severe repression of African political movements and trade unions and of declining living standards and wage levels (Moll, 1988). New policies were also implemented in the reserves. Rather than attempting to re-organise the reserves by concentrating on one location at a time and focusing on fencing and culling which had initiated such opposition, the state advocated a three stage betterment programme which would avoid these problems. The first stage, stabilisation, entailed the maintenance of the *status*

quo and the implementation of a soil conservation programme. According to Moll (1988) "this would involve siting residential areas, excising ruined lands, protecting water and fuel supplies, and establishing sites for rural villages" (Moll, 1988, pp 39). Culling and fencing were avoided. This stage of the programme was given immediate priority and was to be widely implemented. Once this stage had been successfully implemented reclamation could begin. Reclamation was essentially the same as previous betterment planning and was designed to "restore wasted resources and bring them back to optimum product (Moll, 1988, pp 39). The final stage, Rehabilitation, was to involve the creation of a viable peasantry on the 'economic farming units' advocated by the Tomlinson Commission, but this was never implemented. Consequently, a viable peasant class was never 'created'.

Stabilisation began in the Transkei in the mid 1950s and progressed at a rapid pace. Successful stabilisation was later followed by stock culling and reclamation. These policies were given a boost in 1960 when substantial finance was provided for these schemes. However, when Transkei was granted 'self-government' in 1964 and the tribal authorities took over responsibility for the Department of Agriculture and Forestry, many of the more unpopular aspects of stabilisation and reclamation such as culling and fencing were abandoned. This was not surprising given that the politically powerful wealthy elite had to bear the brunt of the culling programmes and that resistance was widespread.

Industrial decentralisation and the creation of industries along the reserve borders was another economic aspect of the reserve policies. It was designed to maximise the carrying capacity of the reserves and prevent migration to urban areas in white South Africa. However, this aspect of state policy was inadequately financed and the impact of industrial decentralisation on the rural economy therefore remained minimal.

The third component of the state's 'Native'` policies was the creation of a new Labour Bureau System aimed at ensuring a constant supply of cheap and disciplined labour to the mines, industry and white farmers in South Africa. This Bureau, together with strict controls on migration to urban areas in white South Africa, aimed to minimise African urbanisation and ensure that an adequate supply of migrant labour was maintained. This system contributed to the enormous growth in the number of migrant labourer from the African reserves. Jill Nattrass (1981) shows that

> "The stream of migrants moving between the modern economy and the rural areas grew over the period 1936-70 at an annual average rate of 3 per cent. However, the rate of growth itself increased, rising from a yearly average of 1.2 percent for the period 1936-46 to 3,9 percent over the ten years 1960-70, largely

reflecting the growth in economic opportunities in the modern sector over these periods" (Nattrass, 1981, p 41).

Not only did the number of migrants increase, but also the length of contracts, indicating a growing reliance on migrant remittances by rural households. The growth in South Africa's African population shows similar but higher trends. The average population growth rate between 1936 and 1970 was 3.9 percent. The growth rate between 1936 and 1946 was 2.1 percent and that between 1960 and 1970 was 4.5 percent. These trends indicate that the growth in migrant labour was high but failed to keep pace with the explosive growth of the African population. Population growth is illustrated in Figure 3.6. The concurrent economic growth during the 1960s facilitated this high growth in migration. However, the recession during the 1980s probably reduced these growth rates. The discrepancy between population and migration growth rates would, therefore, have increased during the 1980s. The general result was that rural households found it increasingly difficult to obtain wage employment. In the Gatyana district there were complaints that work was not easy to obtain (CA, 1/WVE Vol. 69, No. 2/11/2)[24]. There was also a growing number of unemployed people from Transkei's rural areas migrating to Umtata in search of work (CA, 1/WVE Vol. 88, No. 9/18/1)[25]. Hammond-Tooke (1964) argues that influx control measures, designed to prevent and restrict African urbanisation, resulted in labour being "dammed up" in the reserves (Hammond-Tooke, 1964, pp 522).

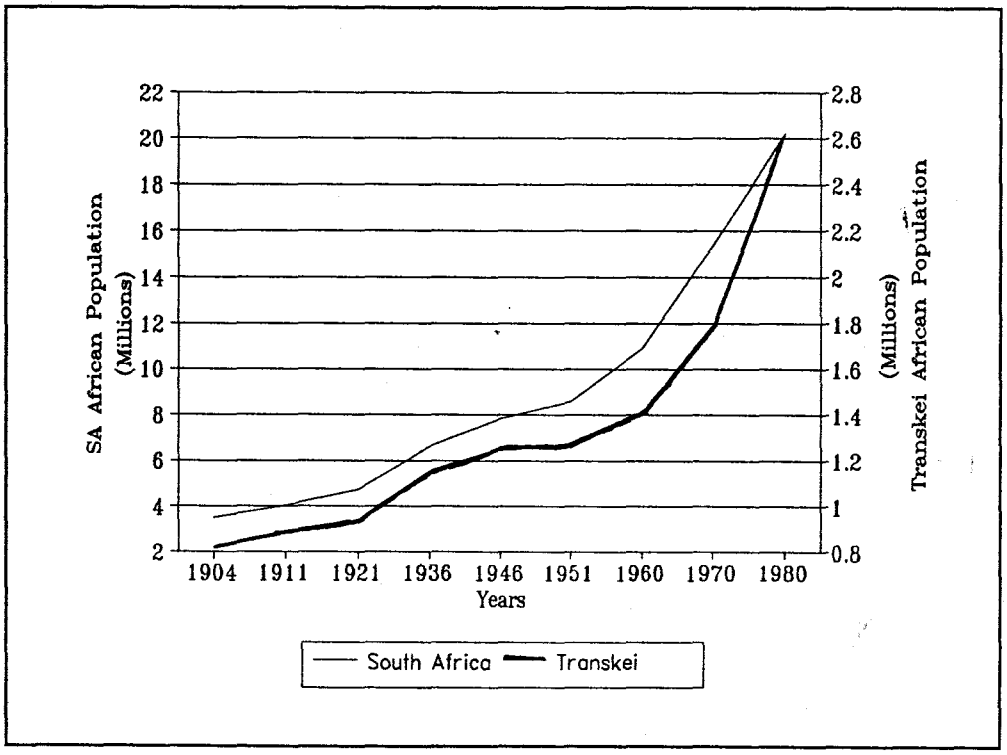

Figure 3.8 *African population trends in Transkei and South Africa, 1904-1984.*

The political component of the state's reserve policy was aimed at the preservation of traditional political relations. This policy involved giving greater powers to Chiefs and headmen through the Bantu Authorities Act with the eventual aim of 'self-government' and 'independence' for the African reserves. The Bantu Authorities Act of 1951 marked a change from direct to indirect rule in the Transkei. This legislation replaced magisterial rule with a tribal system based on Chieftain rule. Three tiers of government, Tribal, Regional and Territorial Authorities, were created. The lowest level, the Tribal authority, consisted of the hereditary Chief, approximately six councillors selected from the community elders by the Chief and two members appointed by the Native Commissioner. Where there was no hereditary Chief, Community Authorities were created. Tribal and Community Authorities belonging to the same tribal cluster were then grouped into nine Regional Authorities which made up the Transkeian Territorial Authority. Each tribal, community and regional authority had a treasury and was responsible for the administration of the area over which it had authority. According to Hammond-Tooke (1964) these responsibilities might include "screening applicants for social services, the maintenance of roads, fences and bridges, channelling labour to the employment bureaux, and so on" (Hammond-Tooke, 1964, pp 519). They were also gradually given judicial powers. The meetings of the Tribal Authority were public but only members of the Authority had a vote. These structures were, therefore, undemocratic and unrepresentative of the communities which they represented. Thus the Chiefs, headmen and wealthy Africans were given greater opportunities to pursue their own interests.

In 1964 the newly elected Transkeian Legislature and cabinet took over the responsibility of the Ministries of Finance, Justice, Interior, Education, Agriculture and Forestry and Roads and Works. The South African government retained control over the Ministries of Defence, Military Units, Foreign Affairs, Police, Posts and Telecommunications, Railways and Harbours, National Roads, Immigration, Currency, Public Loans and Banking, and Customs and Excise (Hammond-Tooke, 1964). Self-government was followed by 'Independence' in 1976. These political changes entailed enormous administrative changes. The administrative structures expanded immensely, poorly trained Transkeians took over administrative positions and enormous inefficiencies developed. Very few records were kept, and bribery and corruption, associated with the client-patron relations, became very common.

Generally, political leadership in the Transkei was very weak and this was reflected in government policy. No major new rural and urban development programmes were initiated. In fact, stabilisation and reclamation continued although without adequate finance. Unpopular culling and fencing programmes were also suspended. The major focus of rural development programmes was road maintenance and the construction of schools and clinics. Very expensive

and isolated capital intensive agricultural projects were also initiated during this period. However, their success rate was very poor and a very small section of the rural population benefitted from such schemes. In fact the success of all government policies were jeopardised by bureaucratic inefficiencies and political interventions by small elite groupings. In a survey of District Commissioners conducted by the Institute for Management and Development studies in 1982, the major day-to-day problems included:

" - absence of a development strategy for the rural areas;
- lack of official reference material;
- the ignoring of proper administrative channels by central government departments;
- the Department of Interior not being conversant with all the activities of the District Commissioners;
- interference in administrative matters by Members of Parliament;
- lack of co-operation from Chiefs and headmen;
- lack of support and responsibility from subordinate staff;
- lack of official transport;
- lack of office and residential accommodation;
- slow promotion; and
- poor public relations" (Osmond et al., 1983, p 153).

3.4.4 Local dynamics 1948-1985

By the late 1950s and 1960s maize cultivation had declined to such an extent that continuous imports were necessary. According to a telex from the Chief Bantu Affairs Commissioner for the Transkei in 1962, it was necessary to import approximately 700 000 bags of maize even in good years (CA, CMT Vol. 3/1043, No. 9A)[26]. There was still quite a significant trade in maize within the Transkei but large imports were necessary and there was no longer any exportation of Transkei maize, due to the completion of the Transkeian grain storage facilities. It is clear that despite the inability to produce enough maize for their subsistence needs, rural households were selling their maize in order to purchase other articles and pay debts and taxes. However, sellers and buyers of maize may not have been the same persons, particularly as there was a high degree of inequality within rural communities. In 1962 a deputation to the Gatyana Magistrate from Nqadu complained that they relied on traders for their food (CA, 1/WVE Vol. 69, No. 2/11/2)[27]. Applications and complaints from Shixini residents indicated that landlessness and unused fields were also a feature of this period. There were far more land applicants than there was land. Many households could not get land due to unpaid taxes and

others could not get fields for their second wives. Shixini residents also complained that homesteads were too close together, indicating that population and pressure on local resources was increasing. Inequality was also evident. While many people struggled to get arable fields the Chief of Shixini location had 15 fields. The Chief also gave residents land on loan in return for a part of their crop (CA, 1/WVE Vol. 59, No. 2/8/3/21)[28] . However, despite this great demand for land there was also evidence of unused fields. This seems to have been related to land becoming unproductive despite an increase in the use of artificial fertilizers and manure (CA, 1/WVE Vol. 86, No. 8/21/4)[29]. Those with rights to use fields were also not allocated new fields if their old ones were eroded, this situation may have encouraged African small-holders to abandon their fields (CA, 1/WVE Vol. 63, No. 2/8/3/30A)[30].

There is also evidence that African small-holders found it increasingly difficult to plough their own land and began to rely on European traders to plough their fields. A number of traders had tractors and hired out their services. However, as part of the Transkei government's attempts to push white traders out of the Transkei, it curtailed the ploughing services offered by white traders during the mid 1950s arguing that Africans must make their own ploughing arrangements. The Government also had a limited number of ploughing units which could be hired by African smallholders but these were restricted to betterment areas which had lowered their stocking levels. The Gatyana district had none of these units (CA, 1/WVE Vol. 84, No. 8/12/1-2)[31]. African farmers also experienced difficulties in securing financial assistance to buy tractors (CA, Umtata Magistrate, hereafter 1/UTA, Vol. 174, No. 8/21/1)[32]. These policies ensured that the only means of ploughing available to African small-holders were ox-drawn ploughs. However, high mortality rates amongst the cattle and the poor condition of the animals inhibited ploughing activities, especially in the early spring. The result was limited ploughing taking place at a later stage, and lower yields.

The Transkei's betterment schemes added to these difficulties. Betterment planning began in the mid 1940s in the form of discussions with rural residents but it was only in the mid 1950s and 1960s that betterment really got under way in the Gatyana district. Cafutweni, Dadamba, Wesa, Qakazana, Nqabarana and Nqabara locations in the Gatyana district were all planned during the late 1950s and early 1960s (see Figure 1.1). However, progress was slow due to local opposition and a lack of funds. The headmen, who agreed to stabilisation and reclamation were largely from Mfengu locations or locations in the north of the district near Willowvale. There was much more opposition from the Gcaleka locations in the south and west of the district, including Shixini (CA, 1/WVE Vol. 69, No. 2/11/2)[33]. In practice however, very few of these measures were successfully implemented in the Gatyana district largely because they depended on community labour and were not adequately financed. Even fencing was very limited. All

that seems to have been done was the planning and the resettlement of homesteads into residential areas. In some instances fences were erected in the face of much local opposition. The authorities also had to change their policy and pay labour to erect fences as labour was not forthcoming on a voluntary basis. Grass strips seem to have been the only other measure that was widely implemented. These grass strips were to be located between strips of contour ploughing to prevent erosion. There was much opposition to these grass strips. The delegation from Nqadu location in 1962 complained that these grass strips , which were believed to be as wide as the ploughing strips, were reducing the area of land they had to plough when they had very little land as it was and little hope of finding wage employment (CA, 1/WVE Vol. 69, No. 2/11/2)[34].

Livestock improvement was another aspect of betterment. Despite declining stock numbers overstocking was still a problem by the late 1950s, causing high cattle mortality rates, low birth rates and low milk production levels. Apparently the condition of the cattle in the Gatyana district in the mid 1950s was much poorer than 20 years prior to this date. One of the reasons for this was that most of the cattle owned by Africans in the Gatyana district were a hybrid breed which were less able to survive in the harsh Transkeian conditions (CA, 1/WVE Vol. 82, No. 8/5/2)[35]. The government's policy therefore was to improve the quality of the livestock by assisting the spread of the indigenous breed. This programme involved the culling of old and weak stock, through stock sales, and the castration of all but three percent of the bulls in each grazing area. Breeding stock were also brought in and sold to Africans in betterment areas (CA, 1/WVE Vol. 86, No. 8/21/4)[36] (CA, 1/UTA Vol. 174, No. 8/5/2)[37]. Culling programmes were also aimed at achieving a suitable ratio of large to small stock such as one cattle unit to two goats and three sheep (CA, 1/WVE Vol. 82, No. 8/5/2)[38]. The implementation of these policies was concentrated in betterment areas and was quite successful but caused much bitterness and opposition to betterment (CA, 1/WVE Vol. 86, No. 8/21/4)[39]. Non-betterment areas such as Shixini were therefore largely unaffected by these measures. Overstocking and the poor quality of the cattle remained a feature of this area.

However, environmental degradation, rather than culling and unsuitable cattle breeds were a major cause of declining stock numbers. Cattle numbers in the Transkei had declined since their peak in the 1930s and levelled off at around 60 000 in the 1960s. Moll (1988) argues that the Transkei reached its maximum carrying capacity during the 1930s and thereafter the carrying capacity declined (see Figure 3.4) due to continued overgrazing and land degradation (Moll, 1988). The poor condition of the grassveld and overstocking made Transkeian livestock vulnerable to drought and disease which plagued the Transkei during the 1950s and 1960s. Veterinary regulations during this period restricted the importation of new stock and maintained

an intensive dipping programme which included the extension and upgrading of dipping tanks. Shixini received it's second dipping tank during the 1950s. These programmes minimized stock losses from disease and left drought and inadequate nutrition as the major causes of stock losses. Stock losses also had differing impacts on the different classes within the rural communities. While large stock owners may have lost large portions of their herds they retained enough stock to continue with ploughing and to rebuild their herds. Small stock owners on the other hand would have lost most if not all of their stock, making ploughing and the rebuilding of herds much more difficult. It was also clear that large stock owners were a very small minority (CA, 1/WVE Vol. 82, No. 8/5/2)[40].

As a consequence of the decline in overall stock numbers and in the number of stock units per household, the livestock trade declined. In addition to this the authorities placed restrictions on the importation of livestock and insisted that more livestock should be exported than imported. In 1959 the government also pushed traders out of the livestock market to ensure the success of its own stock auctions. Three or four traders who exported up to 500 head of cattle annually were pushed out of this trade. The number of stock these traders were allowed to hold was limited to 20 and their grazing rights severely restricted. This prevented them from accumulating stock and exporting one or two consignments annually. Despite the removal of traders from the stock trade, official stock auctions had a very limited success rate (CA, 1/UTA Vol. 174, No. 8/10/1)[41]. In some years there were no stock auctions in the Gatyana district. These factors made it very difficult for small-holders in rural areas to increase their herds and to earn income from the sale of livestock.

Pastoral products were also contributing less to household income. It became increasingly difficult for poor quality Transkeian wool, skins and hides to compete with the high quality products in the rest of South Africa. Various schemes were initiated during this period to improve the sorting and grading of the wool clip and the curing of skins and hides to improve their marketability (CA, 1/WVE Vol. 84, No. 8/9/1)[42]. However such schemes were not widely implemented. In response to these poor economic conditions rural small-holders seemingly replaced cattle and sheep with goats. While cattle and sheep numbers were dropping, goat numbers remained relatively stable (see Figure 3.4). One of the reasons for this may have been the result of goats making better use of available fodder/grazing. Goats also began to replace cattle in traditional sacrifices and the payment of the bride price (CA, 1/WVE Vol. 82, No. 8/5/1)[43]. The lack of opportunities to earn income from pastoral produce and livestock also forced rural small-holders to rely more heavily on wage labour.

After the mid 1950s there was a dramatic decline in the number of stock units per household (Simkins, 1981). This was a consequence of the gradual decline in stock numbers and unprecedented population growth. These conditions would have had an immediate negative impact on cultivation as rural households would not have had sufficient cattle to plough.

'Self-government' and 'independence' brought no major state interventions to alleviate rural poverty. Betterment planning was the only form of rural development planning implemented. However, this planning was poorly financed and failed to provide any marketing and financial assistance to subsistence farmers. It was only in 1985 that the Transkei Agricultural Marketing Board was established to assist farmers with the marketing and grading of their produce. The only agricultural extension services offered were advice and demonstrations from Agricultural Extension Officers in betterment areas.

Table 3.1 shows the percentage of land within each district where resettlement associated with betterment planning has been undertaken. It shows that the central inland districts along the main transport routes have undergone far more planning than the more peripheral coastal districts such as Gatyana. Xhora district, formerly known as Elliotdale, is the only exception to this rule. Its high level of betterment is probably associated with its' largely Mfengu population which is more modernised and Christian than the traditional Gcaleka districts. Such planning has been repeatedly criticised over the last few decades for its failure to halt land degradation and promote rural development. Whisken's (1991) study of soil erosion in Shixini and an adjacent betterment area, Nqabarana (30B), illustrated that betterment had failed to halt the process of land degradation. He found that soil erosion continued in both planned and unplanned areas largely because of the enormous growth in population. Betterment has also been widely criticised for increasing landlessness and for the social disruption associated with the relocation of homesteads into villages (De Wet and McAllister, 1983).

The local government changes brought about by the Bantu Authorities Act, 'Self-government' and 'independence', had some extremely negative effects on the development of rural Transkei. Bribery and corruption, which had always been a part of the administration of the reserves, became much more common. In addition, the traditional practice of gift-exchange had changed during the colonial period, so that these gifts were given before the receipt of the Chief's assistance rather than afterwards. There was therefore no guarantee that these services would be rendered. This bribery and corruption seems to have been most commonly associated with the allocation of land and social services but was also evident in local job appointments. These conditions would have exacerbated stratification within rural communities by making it even more difficult for poor households to get access to arable land and pensions. In addition, the

expansion of the Transkei administration increased the job opportunities for influential and wealthy households.

Table 3.1 **Percentage of land in district in which households had been resettled into betterment villages.**

Magisterial District	% of District resettled into villages
Centane	50
Gatyana	53
Idutywa	70
Mqanduli	13
Umtata	78
Xhora	100
SE Region	59
Transkei	80

Source: Osmond *et al.*, 1983.

By the 1980s Osmond *et al.* (1983) argued that none of the districts in the south east region of Transkei produced anywhere near enough maize to meet their subsistence needs. Even the 'high-production districts' failed to produce enough maize for these needs due to their large populations (Osmond *et al.*, 1983, pp 19). This trend was not surprising given that Transkei maize production levelled off at around 60,000 tons from the 1960s onwards despite enormous increases in the rural population (see Figures 3.5 and 3.6). Most of the maize produced in the Transkei, 87.9 percent, was grown by subsistence farmers (Development Bank of Southern Africa, 1987). By the 1980s there was no longer any significant trade in maize (Osmond *et al.*, 1983). Maize was produced entirely for subsistence needs and had to be supplemented by regular food purchases. A survey of 30 rural traders and 48 customers, conducted by Osmond *et al.* (1983), showed that a large proportion of households' income was spent on basic foods such as grain, vegetables, sugar, meat, dairy and poultry products. Basic food items were usually purchased more than once a week on short shopping trips made by foot. Credit was difficult to obtain with only 20.8 percent of customers receiving credit. The median amount of credit obtained was R20.

The explosive growth in the African population since the 1960s also probably had a significant detrimental effect on the rural environment. Witlow and Campbell's (1989) study of soil erosion in Zimbabwe showed that soil erosion was closely related to high population densities and population growth. Whisken's (1991) study of soil erosion in Shixini and Nqabarana locations indicate that population growth had a similar impact on Gatyana. Most of this erosion was associated with roads and paths but a significant proportion of this erosion occurred on old arable land suggesting that local cultivation methods had promoted land degradation and erosion thus inhibiting further cultivation.

Trade in rural Transkei underwent significant changes between the 1960s and 1980s. One of these changes was the total decline of barter trade. There were two major reasons for this move away from bartering. The first was that the sale of local agricultural products in rural Transkeian areas had declined due to declining productivity and increasing reliance on migrant remittances. However, it was also evident that trade in agricultural produce became increasingly less profitable as restrictions imposed by South African Agricultural Control Boards increased and Government policies curtailed trading activities. Another major reason for the move away from bartering was associated with the change in the trading community. As part of the separate development policies the South African Government pursued a policy of encouraging Africans to become traders and European traders to leave the Transkei. In 1951 there were 34 European traders in the Gatyana district and two African traders. By 1952 the number of African traders had increased to 15. In 1963, Africans were encouraged to purchase European trading stations and provided with financial assistance (CA, 1/WVE Vol. 54, No. 2/4/2)[44]. The five mile rule was also changed to two miles to allow more traders to operate. This rule permitted traders to establish a business within a two mile radius of any other trader. By the 1980s very few of the white traders still conducted business in the Gatyana district. One of the consequences of these changes was the eradication of the barter trade. Most of the Africans who went into trading had little prior training in this type of work and lacked the range of contacts that European traders had. They also had much more difficulty in getting access to credit. There were also different attitudes. A former leader of the opposition in the Transkei, Knowledge Guzana, described the differences between African and white traders as follows:

> "The white traders were patriarchal rulers and some of them bled our people dry. But an overriding majority of them were good men. They would lend us money against our mealie crops and wool clips, and feed us through lean years. They'd even drive us miles to a doctor when we were ill. But the black traders who have taken over can't begin to fulfil that sort of need in the community. Many don't even try. They're in the business for the cash and they insist on being paid in cash. A lot of tribesmen only used to get through the year

> because they could buy on credit. Now that facility had all but gone. And most black traders aren't interested if people get sick" (Kropman, 1979, p 42).

Low agricultural production levels and negligible trade forced rural households to rely on migrant remittances, wages and pensions for household survival. According to Osmond *et al.* (1983), migrant remittances were by far the most important source of income. By the 1980s, 83.3 percent of all migrants were employed outside the Transkei. The migrants employed inside the Transkei were largely employed in the government service as teachers, clerks, nurses and policemen. Very few local job opportunities were available in the rural areas. Migrant remittances therefore provided an incredibly important source of income to rural households. This was particularly true for the 54 percent of households with an annual income of less than R1000. Migrant remittances provided an average of 72 percent of income for these households. The median amount remitted by all Transkei migrants was R500 per annum but there were large differences between internal and external migrants. The median amount remitted by external migrants was R798 p.a. and for internal migrants R1279 p.a. It is important to note however, that remittances from mine workers had increased substantially since 1979 due to the growth of the trade union movement (Osmond *et al.*, 1983).

Pensions and wages were also important sources of household income. However, pensions contributed a major portion of income for poor households earning less than R1000 p.a., while wages provided the major source of income for households with an annual income over R3500 (Osmond *et al.*, 1983). The sale of household products provided under four percent of household income for households in all income categories. What is also clear is that income differentials were enormous. According to Osmond *et al.* (1983)

> "the most wealthy five percent of households earn over 25 percent of all income and the top 20 percent almost 60 percent of total income earned. The poorer 50 percent earn around 11 percent of all income, but the poorest 21 percent a mere two percent" (Osmond *et al.*, 1983, pp 133).

3.5 Conclusion

At this stage it is necessary to consider how this historical evidence relates back to the original aims of the thesis. This requires a summary of the agricultural changes which have occurred in Shixini since the 1930s, followed by a discussion of the major reasons for these changes.

A gradual and slow decline in total output was the main feature of agriculture in Shixini and Transkei's rural areas in general between the 1930s and 1980s. Cattle and sheep numbers have

decreased considerably while goat numbers increased steadily. This evidence suggests that households were turning to goats as cattle and sheep herds dwindled. It was also clear that maize output had diminished considerably along with other crops. Associated with this decline was the almost complete disappearance of agricultural trade with traders.

The reasons for this agrarian decline were complex and diverse. Historical, socio-economic, political and environmental factors all interacted and contributed to this decrease in productivity. To begin with it was evident that some of the major factors contributing to the decline had their origins in the period prior to the 1930s. The rural population responded to coercive colonial policies aimed at incorporating them into the world capitalist economy by expanding and redirecting their trade networks towards the colony. As their pastoral economic base eroded they adopted European techniques and expanded cultivation. In times of drought, famine, disease and war, rural households also engaged in wage labour in order to restore their herds and renew cultivation. However, with the discovery of gold and diamonds during the 1870s and the concomitant increase in the demand for labour, new pressures were brought to bear on the African peasants. Labour recruiting procedures were improved and traders encouraged to induce debt by offering so much credit that rural households would have no alternative but to enter wage labour. In addition, the growing political power of white farmers and the commercialisation of their operations improved their competitive position vis-a-vis African peasants. An alliance between mining capital and white farmers also succeeded in securing racially discriminatory legislation and policies which severely limited African access to land and further undermined the African peasantry's ability to compete with white commercial farmers. These pressures began to mount in the early 1900s but it was another 30 years before peasant cultivation in the Transkei began to decline.

It seems that the initial peasant response to these pressures was to expand cultivation. Land was becoming scarce during the first few decades of the twentieth century due to population growth and the expansion of household arable holdings. Consequently, an enormous amount of marginal land was brought under cultivation and traditional shifting techniques were undermined by the lack of sufficient land. The result of such practices was the eventual exhaustion of the soil and declining yields. Rather than turn to migrant labour many rural households in Gatyana invested in livestock and sheep in particular. International wool prices remained relatively high in comparison to other agricultural products during the first few decades of the nineteenth century during the first few decades of twentieth century.

Overstocking eventually led to overgrazing and the deterioration of the grassveld. Moll (1988) argues that the Transkei reached it's peak carrying capacity during then 1930s and thereafter

declined. Overall livestock numbers decreased despite the continued investment of migrant earnings in livestock. Insufficient and poor quality grass reduced stock numbers and the strength of the animals. This had a negative effect on cultivation. The weakness of the cattle and their dwindling numbers meant that ploughing became less frequent and shallow thus reducing yields.

In addition to these long-term difficulties the Gcaleka people had a very severe drought, followed by locust plagues during the mid 1930s. Taxes were also increased substantially during this period. The result was a huge increase in the number of migrants leaving for the mines and the length of time workers remained absent from the rural household. Environmental degradation and the absence of good agricultural markets then prevented recovery. Labour migration became much more permanent for the majority of rural households and drew labour away from agricultural production thus adding to the obstacles in the way of agricultural recovery.

Consequently, African peasants were not able to recover from these difficulties as they had recovered from colonial wars, Rinderpest and the East Coast Fever epidemics. Poverty, labour shortages, population growth, a lack of agricultural markets, an absence of capital investment and continued environmental degradation combined to perpetuate the agricultural decline. Government policies since the 1930s have done nothing to assist the rural population. Instead, the demand for migrant labour continued to grow and apartheid policies inhibited rural-urban migration thus increasing pressure on limited rural resources. Rural conservation and development policies such as betterment planning, grass strips, contour banks and livestock culling made it more difficult for rural households to maintain agricultural output.

'Self-government' and 'independence' in the Transkei had a number of contradictory effects on rural communities. Mass resettlements of South African squatter communities in the Transkei were prevented by government opposition. Culling programmes were also scrapped due to rural opposition, particularly from large stock owners. This allowed the minority of wealthy stock owners to continue increasing the size of their herds, thus promoting continued environmental degradation and making it more difficult for poor households to maintain livestock. In addition, the expansion of the Transkeian administration, and with it, local job opportunities for wealthy and educated Transkeians, exacerbated inequalities within rural areas. Studies of rural communities during the 1980s showed that the wealthiest households were those who were able to secure jobs in the Transkeian civil service. The transfer of rural trading stations to Africans also had a negative impact on rural communities. Only wealthy and influential persons were able to buy these stations. Their profit motives and a lack of experience

and trading contacts resulted in the almost total decline of agricultural trade and bartering. Finally, the lack of any comprehensive rural development programmes and a shortage of finance simply maintained the *status quo*.

While the total output figures for the Transkei suggest that the process of agricultural decline was relatively slow, per capita output declined dramatically after the mid 1950s (Simkins, 1981). Explosive population growth seems to be the major reason for this dramatic decline. As population increased, the number of stock units per household declined, thus undermining cultivation.

This historical discussion has provided a regional picture of agricultural decline and identified the major socio-economic and environmental factors contributing to that process. However, the response of the rural community has not been fully examined. Apparently they turned to migrant labour but it was not clear how agricultural practices changed. Subsistence agriculture continued but whether the area of land cultivated declined or remained constant or whether any of the cultivation methods changed requires further investigation. In addition, the relative importance of different socio-economic and environmental factors in undermining agriculture has not been ascertained. These are the questions which will be addressed in the chapters which follow.

Endnotes

1. Cape Archives (hereafter CA), Willowvale Magistrate's records (hereafter 1/WVE) Vol. 82, File No. 8/5/1, Willowvale.

2. CA, Chief Magistrate Transkei (hereafter CMT) vol. 3/1048, File No. 9/j. Minutes of the Transkeian Territories Civic Association at Umtata on 12 March 1963.

3. CA, 1/WVE Vol 5, No. 68, Willowvale Magistrates correspondence.

4. CA, 1/WVE Vol. 13, No. 2/21/2, Shixini Location, Willowvale.

5. CA, 1/WVE Vol. 5, No. 68, Correspondence, Willowvale Magistrate.

6. CA, CMT Vol. 3/1048, No. 9/J. Letter from Chief Magistrate to Native Affairs Department, Pretoria.

7. CA, 1/WVE Vol. 4, No. 46, Records of the Willowvale Magistrate.

8. CA, 1/WVE Vol. 87, No. 7/9/1.

9. Daily Dispatch, 8 April 1935, Native Labour Commission, Further evidence at Umtata.

10. CA, CMT Vol. 3/835, No. 572-26, Dipping Operations, Willowvale.

11. CA, CMT Vol. 3/835, No. 572-26, Dipping Operations, Willowvale.

12. CA, 1/WVE Vol. 1, Willowvale Magistrate's correspondence.

13. CA, CMT Vol. 3/835, No. 572-26, Dipping Operations, Willowvale.

14. CA, 1/WVE Vol. 7, No. 2/2/2, Minutes of the Magistrates meeting with headmen and communities on 30 September 1930.

15. CA, 1/WVE Vol. 87, No. 7/9/1, Willowvale Magistrate's records.

16. CA, 1/WVE Vol. 7, No. 2/2/2, Minutes of the Magistrates meeting with headmen and communities on 30 September 1930.

17. CA, 1/WVE Vol. 82, No. 8/4/1, Willowvale Magistrate's records.

18. Daily Dispatch, 8 April 1935, Native Labour Commission, Further evidence at Umtata.

19. Daily Dispatch, 8 April 1935, Native Labour Commission, Further evidence at Umtata.

20. Daily Dispatch, 8 April 1935, Native Labour Commission, Further evidence at Umtata.

21. CA, CMT Vol. 3/1043, No. 9B, Correspondence on the proposals for Maize storage facilities in the Transkei.

22. CA, CMT Vol. 3/1043, No. 9B, Correspondence on the proposals for Maize storage facilities in the Transkei.

23. CA, CMT Vol. 3/1043, No. 9B, Correspondence on the proposals for Maize storage facilities in the Transkei.

24. CA, 1/WVE Vol. 69, No. 2/11/2, Rehabilitation, Willowvale.

25. CA, 1/WVE Vol. 88, No. 9/18/1, Labour records, Willowvale.

26. CA, CMT Vol. 3/1043, No. 9A, Maize Correspondence.

27. CA, 1/WVE Vol. 69, No. 2/11/2, Rehabilitation, Willowvale.

28. CA, 1/WVE Vol. 59, No. 2/8/3/21, Shixini Location, Willowvale.

29. CA, 1/WVE Vol. 86, No. 8/21/4, Annual agricultural report, Willowvale.

30. CA, 1/WVE Vol. 63, No. 2/8/3/30A, Nqabarana B location, Willowvale.

31. CA, 1/WVE Vol. 84, No. 8/12/1-2, Willowvale agricultural records.

32. CA, Umtata Magistrate (hereafter 1/UTA), Vol. 174, No. 8/21/1, Ploughing correspondence, Umtata.

33. CA, 1/WVE Vol. 69, No. 2/11/2, Rehabilitation, Willowvale.

34. CA, 1/WVE Vol. 69, No. 2/11/2, Rehabilitation, Willowvale.

35. CA, 1/WVE Vol. 82, No. 8/5/2, Livestock policies, Willowvale.

36. CA, 1/WVE Vol. 86, No. 8/21/4, Agricultural report, Willowvale, 1961.

37. CA, 1/UTA Vol. 174, No. 8/5/2, Correspondence and circulars.

38. CA, 1/WVE Vol. 82, No. 8/5/2, Livestock policies, Willowvale.

39. CA, 1/WVE Vol. 86, No. 8/21/4, Agricultural report, Willowvale, 1961.

40. CA, 1/WVE Vol. 82, No. 8/5/2, Livestock policies, Willowvale.

41. CA, 1/UTA Vol. 174, No. 8/10/1, Correspondence, Umtata.

42. CA, 1/WVE Vol. 84, No. 8/9/1, Agricultural products, Willowvale.

43. CA, 1/WVE Vol. 82, No. 8/5/1, Stock limitation, Willowvale.

44. CA, 1/WVE Vol. 54, No. 2/4/2, Trading records, Willowvale.

Chapter 4: Land Use Analysis

4.1 Introduction

Chapter three examined the regional and local changes in agricultural practices in Transkei evident from the historical and anthropological literature and official records. Significant changes were found to have taken place from the 1800s to the 1980s. To begin with there was a long-term increase in agricultural output and livestock stimulated by colonial penetration into the traditional pre-colonial Xhosa economy. After the 1930s there was a gradual decline in maize yields and cattle and sheep numbers. Goat numbers were the only agricultural factor which increased. After the mid 1950s there was a rapid deterioration in *per capita* agricultural output related to explosive population growth.

Agricultural decline after the 1930s was found to be the result of a combination of environmental, political, economic and social factors. These included: grassveld deterioration due to overstocking, the exhaustion of arable soils, restrictions on trade, racially discriminatory policies which undermined the competitive position of African peasants in relation to white commercial farmers, population pressures, official cattle culling and castration programmes. Although, these sources provide a good general background they failed to reveal the response of the rural population to these changing conditions. To redress this inadequacy aerial photographs of Shixini location in 1942, 1962 and 1982 were analysed as an additional source of data on agricultural change in Transkei's rural areas. They were expected to give an indication of the impact of the above mentioned general trends on rural agriculture in a specific location and the response of the rural population to these changes.

The aerial photographs were also an important source of data for this study because they provided one of the few quantitative sources of historical data available about land use practices, vegetation and settlement. They therefore provide an important supplementary source of data to the more qualitative historical, anthropological and survey data used in other sections of the thesis.

This chapter will begin by defining the methods used to obtain data on Shixini's land-use practices, settlement patterns and vegetation. This will then be followed by a presentation of the results and a critical assessment of these results with reference to other sources of data.

4.2 Methodology

Pairs of stereoscopic aerial photographs of Shixini Location for 1942, 1962 and 1982 were obtained from the Chief Director of Surveys and Mapping, Cape Town, and the Surveyor General in Umtata, Transkei. The 1942 photographs (job number 5 of 42) were taken at the 1:29 000 scale while the 1962 photographs (job number 468) and the 1982 photographs (job number 101/E) were taken at a 1:30 000 scale. These photographs were studied under a stereoscope and information on land-use practices, settlement, infrastructure and vegetation was extracted and drawn onto tracings of the 1:10 000 1982 orthophoto maps (orthophoto map numbers 3228 BC 8, 9, 13, 14, 15, 19 and 20). This was done in order to ensure that the resulting maps were spatially consistent. Once these maps had been drawn they were entered into the Arc Info Geographic Information Systems (GIS) programme to facilitate the mapping and analysis of the spatial data.

Three broad sets of data were mapped. Firstly, the road, path, river and stream networks were extracted directly from the orthophoto maps. Secondly, data on huts, trading stores, schools and clinics were extracted from the aerial photographs and mapped . Each hut was categorised according to the homestead to which it belonged, the size of the stock enclosure associated with it and whether it was associated with a garden or not. Traditional Xhosa homesteads had a typical format as illustrated in Figure 3.2. The huts were built in a semi-circle or line facing the stock enclosure and garden which were located just in front of the huts. This typical layout of homesteads facilitated the task of identifying individual homesteads. Twelve categories of huts were identified (see Figure 4.1). These twelve were divided into two main groups, one set was associated with a garden and the other was not. Within these two groups huts were classified according to the size class of stock enclosure they were associated with. Five categories of stock enclosure were identified. The first size class was a stock enclosure approximately the same size as an average round hut. The second size class was twice the size of an average round hut and so forth up until the fifth size class. Those households not associated with a stock enclosure were given a separate classification. An average round hut was taken as the unit of measure as huts had a relatively standard size and because huts were usually located next to stock enclosures which made the estimation of stock enclosure sizes relatively simple. Due to the large scale at which the aerial photographs were taken it was not possible to differentiate between used and abandoned households.

The third set of data obtained from the aerial photographs was the vegetation data. The classifications used were simple and broad. Vegetation was classified according to whether it

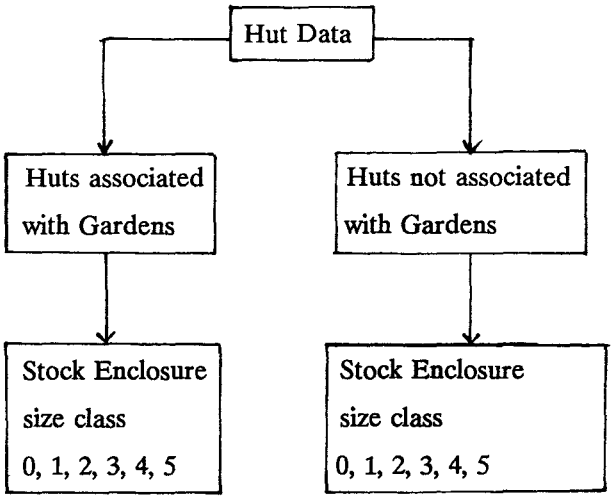

Figure 4.1 Categories of Huts

was bushveld, grassveld/bush clump ecotone, grassveld, gardens or formerly cultivated fields. The grassveld/bush clump ecotones were those areas where grassveld was being invaded by bush clumps but where the grass was still visible. Grassveld, bushveld, grassveld/bush ecotones and fenced gardens were relatively simple to identify but difficulties arose when trying to differentiate between fallow and recently cultivated arable land. It was evident that cultivated or recently cultivated land tended to have a more regularly lined texture produced by ploughing activities while fallow arable land tended to have a more irregular pattern of vegetation within the field outlines. However, slope gradient and shadows made these differences difficult to identify at times so that these two classifications may have a large measure of error. Other sources of data would need to be consulted to ascertain the validity of the findings in this regard.

Once all this data had been extracted from the aerial photographs and mapped, it was entered onto the Arc Info GIS programme to facilitate the mapping of the data and the process of summarising and analysing the quantitative data on areas and frequencies. Entering the data onto the programme involved digitising the traced maps as well as editing and labelling. Once the maps had been completed the quantitative data on the number of huts in each category, the number and size of gardens, the area of cultivated land, bushveld and grassveld/bush clump ecotone, etc. was imported onto a Quatro Pro spread sheet to facilitate the summary, analysis and graphical representation of the data.

4.3 Results

The GIS maps of Shixini for 1942, 1962 and 1982 are included in appendix 6 as Figures A.10, A.11 and A.12. The numerical data from these maps is summarised in Table 4.1.

The first obvious change that was evident from the land use analysis was the enormous increase in the number of huts and households in Shixini between 1962 and 1982 (see Table 4.1). This trend is illustrated in Figure 4.2 below. This increase may have resulted either from a sudden increase in the natural population growth rate or apartheid restrictions on migration. This will be discussed in the following section.

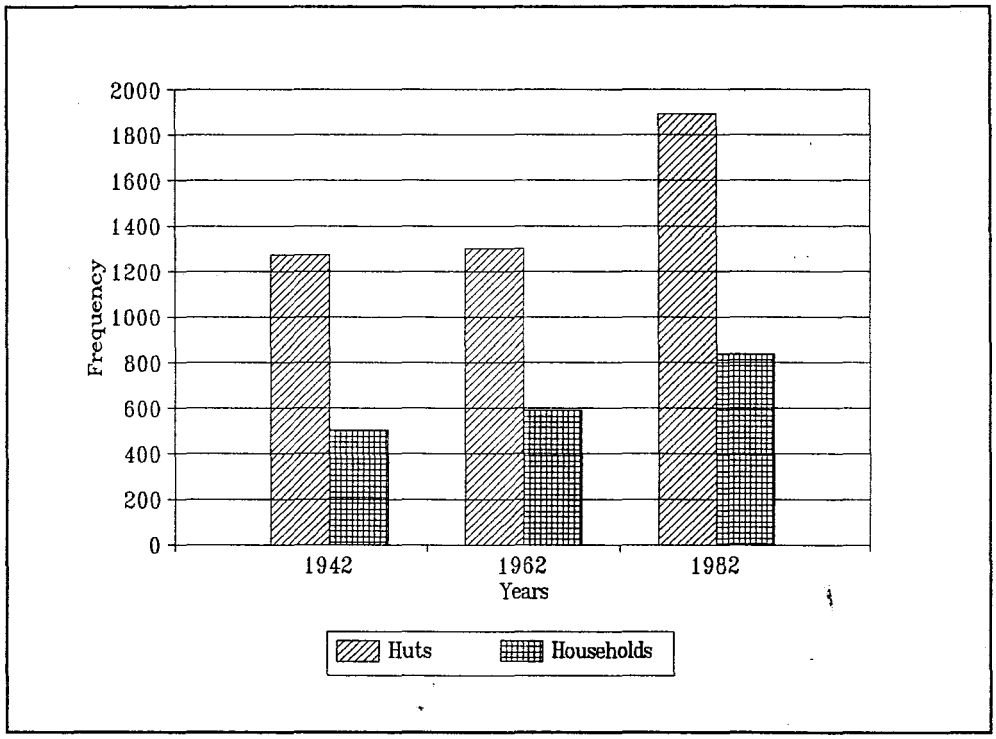

Figure 4.2 Changes in the number of huts and households.

The land use data also showed that the number of huts per household for the overall Shixini population did not change significantly between 1942 and 1982. In 1942 the average number of huts per household was 2.4, in 1962 it was 2.2 and in 1982, 2.3 (see Table 4.1). This suggests that family size remained relatively stable throughout the period under study. However, when households were disagregated into non-garden and garden cultivators it became evident that garden cultivators tended to have a larger number of huts per household, and therefore larger households, than non-garden cultivators in each year under study (see Table 4.2). This trend confirms the hypothesis that larger households would tend to have a greater need and/or ability

Table 4.1 **Land use frequency and area (hectares) data for each year and the percentage change between 1942-62 and 1962-82.**

Land Use Data	1942	1962	1982	% Change 1942-62	% Change 1962-82
No of Huts	1269	1301	1888	2.5	45.1
No of Households (HH)	501	585	836	16.8	42.9
Mean No Huts/HH	2.5	2.2	2.3		
HH w/o Stock	132	173	190	31	10
HH with Stock	369	412	646	11.7	56.8
Stock Encl. 1	29	100	220	244.8	120.0
Stock Encl. 2	66	106	153	60.6	44.3
Stock Encl. 3	49	66	92	34.7	39.4
Stock Encl. 4	90	58	83	-35.6	43.1
Stock Encl. 5	135	82	98	-39.3	19.5
No HH w Garden	131	359	699	174.0	94.7
No HH w/o Garden	370	226	137	-38.9	-39.4
No of Gardens	131	359	699	174.0	94.7
% HH w Gardens	26	61	84		
Mean Garden Size	0.2088	0.1948	0.4191	-6.7	115.1
Area of Gardens	30	68	327	126.8	382.7
Area of Fields	1327	1281	650	-3.4	-49.2
Area of Fallow	578	605	639	4.7	5.5
Area of Bushveld	257	246	397	-4.2	61.2
Area of G\BC	561	725	931	29.3	28.4

Note: No = Number w = with G\BC = Grassveld\Bush Clump Ecotone
HH = Household w\o = without

Table 4.2 **Household differences between garden and non-garden cultivators in 1942, 1962 and 1982.**

Years	Non-cultivators Huts/HH	Garden Cultivators Huts/HH	All Households Huts/HH
1942	2.3	3.3	2.4
1962	1.8	2.5	2.2
1982	1.25	2.5	2.3

to cultivate. However, this difference in household size between garden and non-garden cultivators may also be due to the fact that many of the non-garden cultivators were either new homesteads, which had not yet established a garden, or old homesteads with elderly residents.

The land use analysis also revealed changes in the number and size of stock enclosures in Shixini. The number of households with stock enclosures increased in a similar manner to population. The number of households increased by 16.8 percent between 1942 and 1962 while stock enclosures rose by 11.7 percent (see Table 4.1). In the subsequent period households increased by 43 percent and stock enclosures by 57 percent (see Figure 4.3). These data suggest that most households owned livestock throughout the period under study. It was also evident that households increased in size along with stock enclosures. The data in Table 4.3 shows that

Table 4.3 **The relationship between household size and stock enclosure size in 1942, 1962 and 1982.**

Stock Enclosure Size Classes	1942 Huts/HH	1962 Huts/HH	1982 Huts/HH
0	1.6	1.7	1.6
1	1.9	1.8	1.9
2	2.2	2.1	2.4
3	2.2	2.2	2.8
4	2.9	2.7	2.7
5	3.5	3.6	3.2

large households had larger stock enclosures than smaller households. In 1942 the number of huts per household ranged from 1.6 in stock enclosure size class 1 to 3.5 in size class 5, by 1982 from 1.6 to 3.2 huts per household. The same trends were evident when households were divided into those with and without gardens (see Appendix 1, Tables A.1 and A.2)

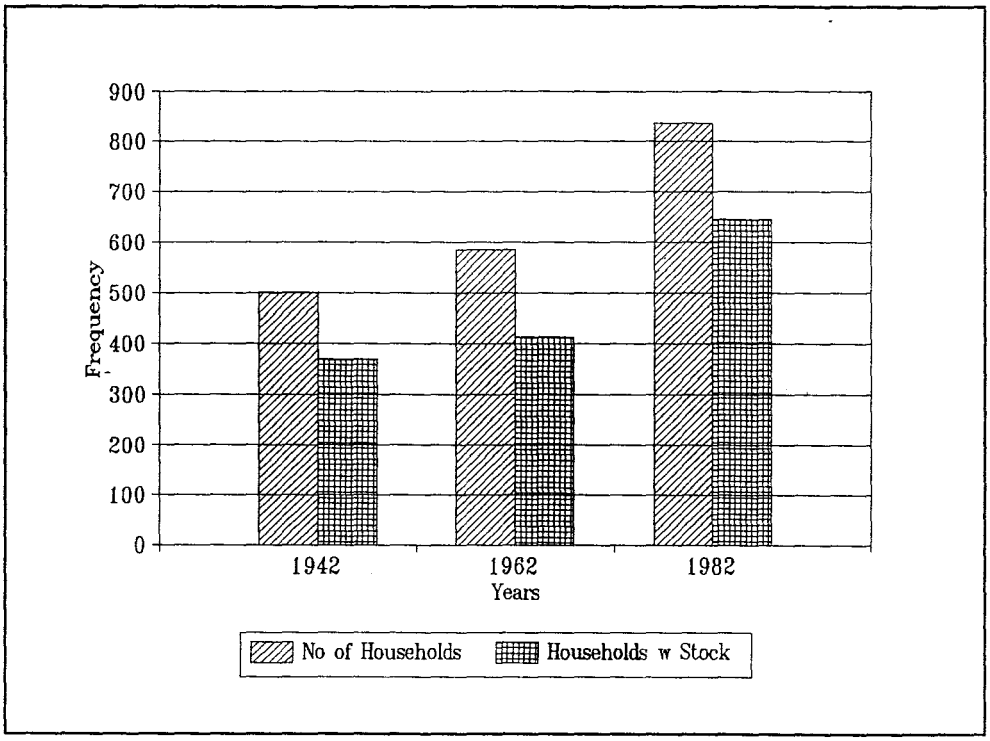

Figure 4.3 Changes in the number of Shixini households and households with stock enclosures.

However, the proportion of households with small or large stock enclosures did not remain constant. Households with stock enclosures in size class one, two and three were grouped together as households with small stock enclosures, while households with stock enclosures in size class four and five were grouped together as households with large stock enclosures. Once these households had been grouped it became evident that the proportion of households with large stock enclosures decreased from 45 percent in 1942 to 24 percent in 1962 and 22 percent in 1982. However, due to population growth, the number of households with large stock enclosures remained the same. Households with small stock enclosures, on the other hand, increased from 29 percent in 1942 to 46 percent in 1962 and 55 percent in 1982. Households who had no livestock enclosures increased by 31 percent between 1942 and 1962 and then much more slowly at 10 percent between 1962 and 1982. As livestock is a traditional form of wealth, the size of a homesteads stock enclosure would also give an indication of the households' wealth. As population increased so did the number and proportion of poor households thus indicating

that the population in Shixini was becoming poorer and that the wealthy minority were diminishing as a percentage of the total population. The community was therefore becoming more unequal and stratified during the period under study.

The only major change in vegetation was an increase in bush. Figure 4.4 below illustrates how the area of bushveld in Shixini increased by 61.2 percent between 1962 and 1982 (see Table 4.1). The area of the grassveld/bush clump ecotone increased more steadily at 29 and 28 percent between 1942 and 1962, and 1962 and 1982 respectively.

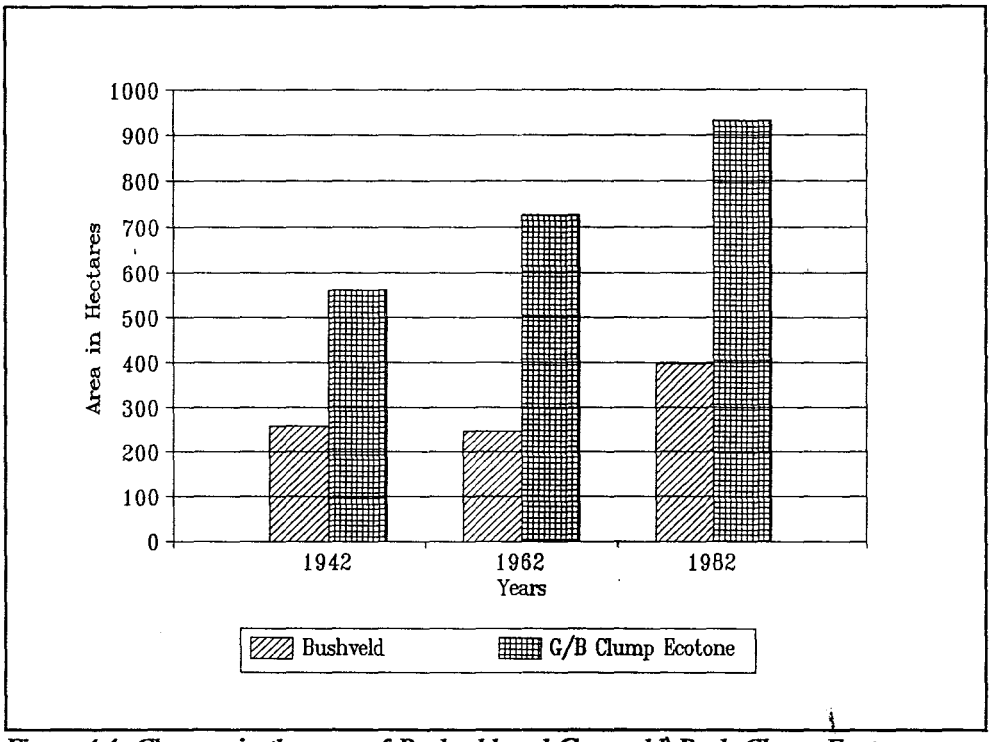

Figure 4.4 Changes in the area of Bushveld and Grassveld\Bush Clump Ecotone.

The land use analysis also revealed significant changes in cultivation trends within Shixini since the 1940s. One of these changes was a dramatic 49 percent decrease in the area of fields under cultivation between 1962 and 1982. The decline prior to 1962 was much smaller at four percent (see Table 4.1 and Figure 4.5). These trends in field cultivation are spatially illustrated in Figures 4.6 to 4.8.

There was also a massive expansion of garden cultivation between 1942 and 1982. The GIS data indicated that there were two distinct periods of expansion (see Table 4.1 and Figure 4.5). During the first period, 1942 to 1962, there was a very rapid growth in the number of

households cultivating gardens. An increase of 174 percent between 1942 and 1962 as opposed to a 95 percent increase during the 20 years after 1962 (see also Figure 4.9). The second period was characterised by a growth in the area of land under garden cultivation and the mean size of gardens. The total area of gardens increased slightly between 1942 and 1962 and much more rapidly in the period 1962 to 1982. Mean garden size decreased from 0.2088 hectares in 1942 to 0.1948 hectares in 1962 and subsequently increased dramatically to 0.3570 hectares in 1982 (see Figure 4.9). These trends in garden cultivation are spatially illustrated in Figures 4.6 to 4.8.

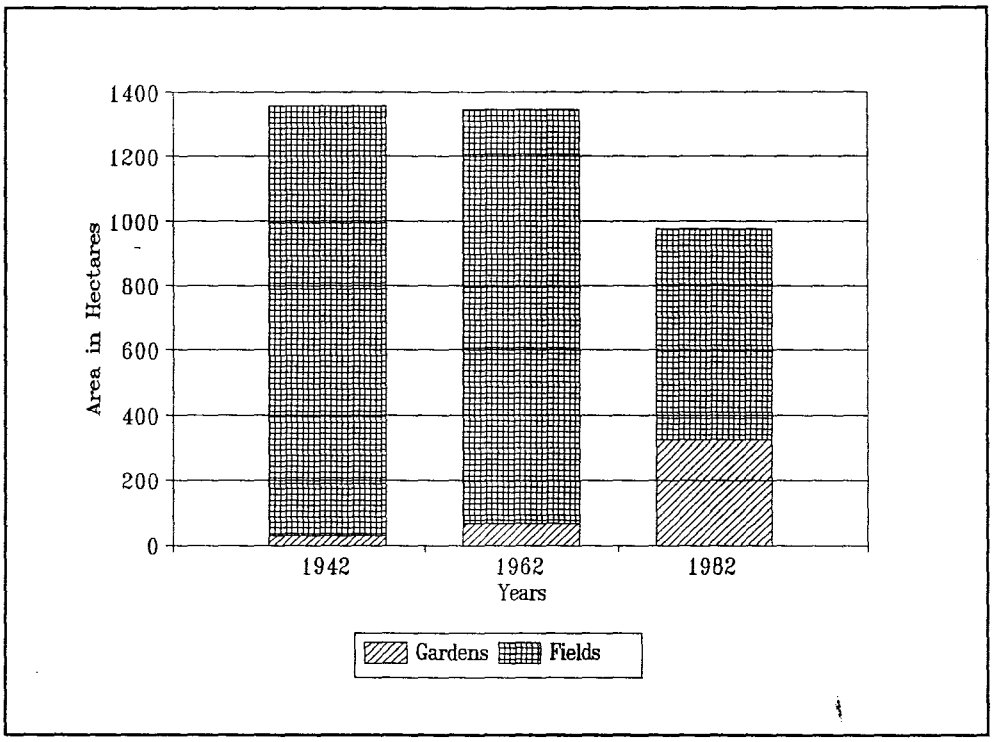

Figure 4.5 Changes in the area of cultivated land, gardens and fields.

However, garden size varied quite considerably between poor and wealthy households. It is evident that in 1942 and 1962 there was a positive relationship between household size, garden size and stock enclosure size (see Table 4.4). The wealthier the household the larger the garden. Between 1942 and 1962 the most significant increases in mean garden size were amongst poorer households with small stock enclosures in the first, second and third size categories. Between 1962 and 1982 there was a enormous increase in the mean size of gardens for all households but particularly amongst poor households. This faster rate of growth in the size of gardens amongst poor households suggests that gardens were far more important to poor households than wealthy households. Poverty and a lack of resources may, therefore, have been the major factor stimulating the change to garden cultivation.

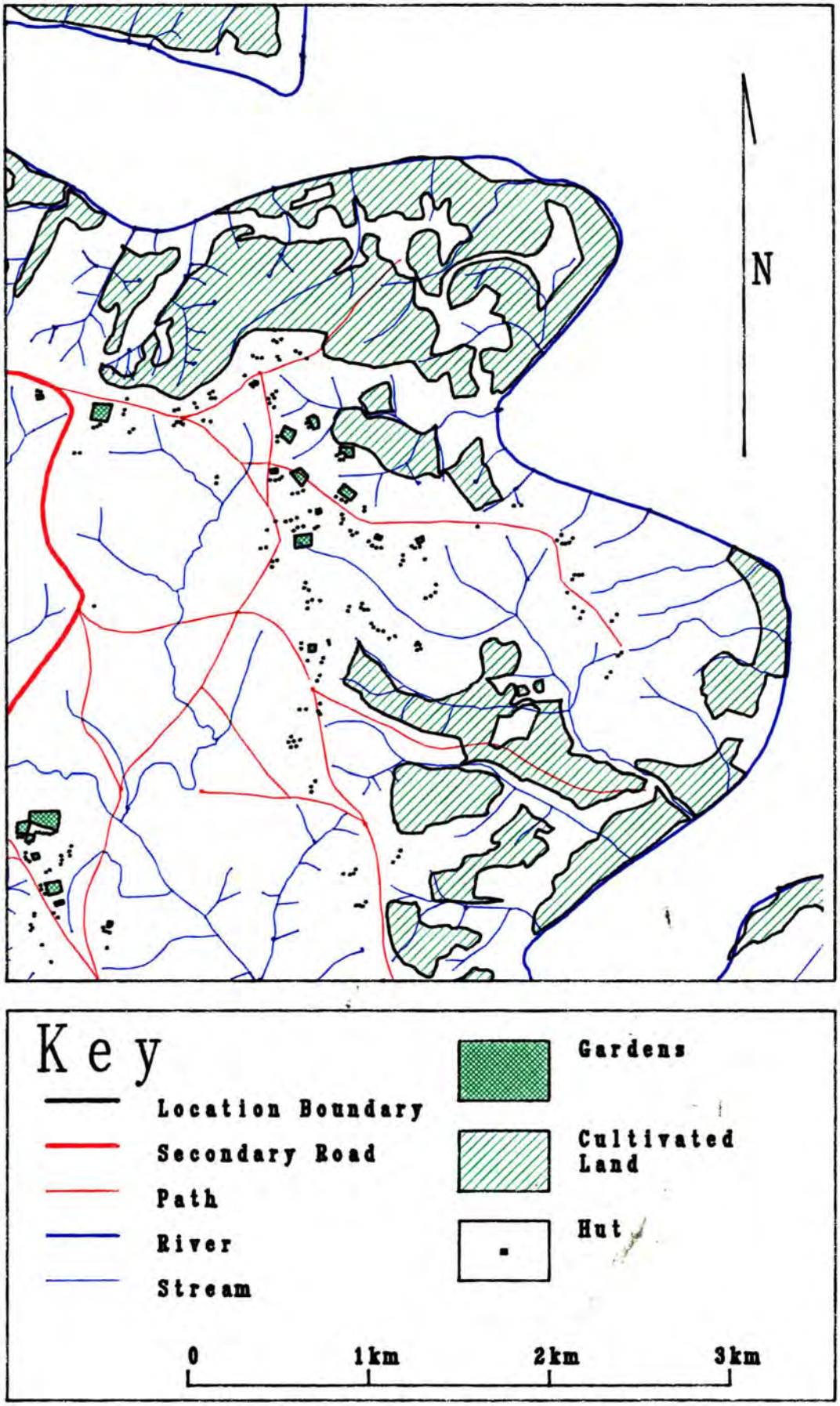

Figure 4.6 Map illustrating the settlement pattern, gardens and fields in Nompa sub-ward, 1942

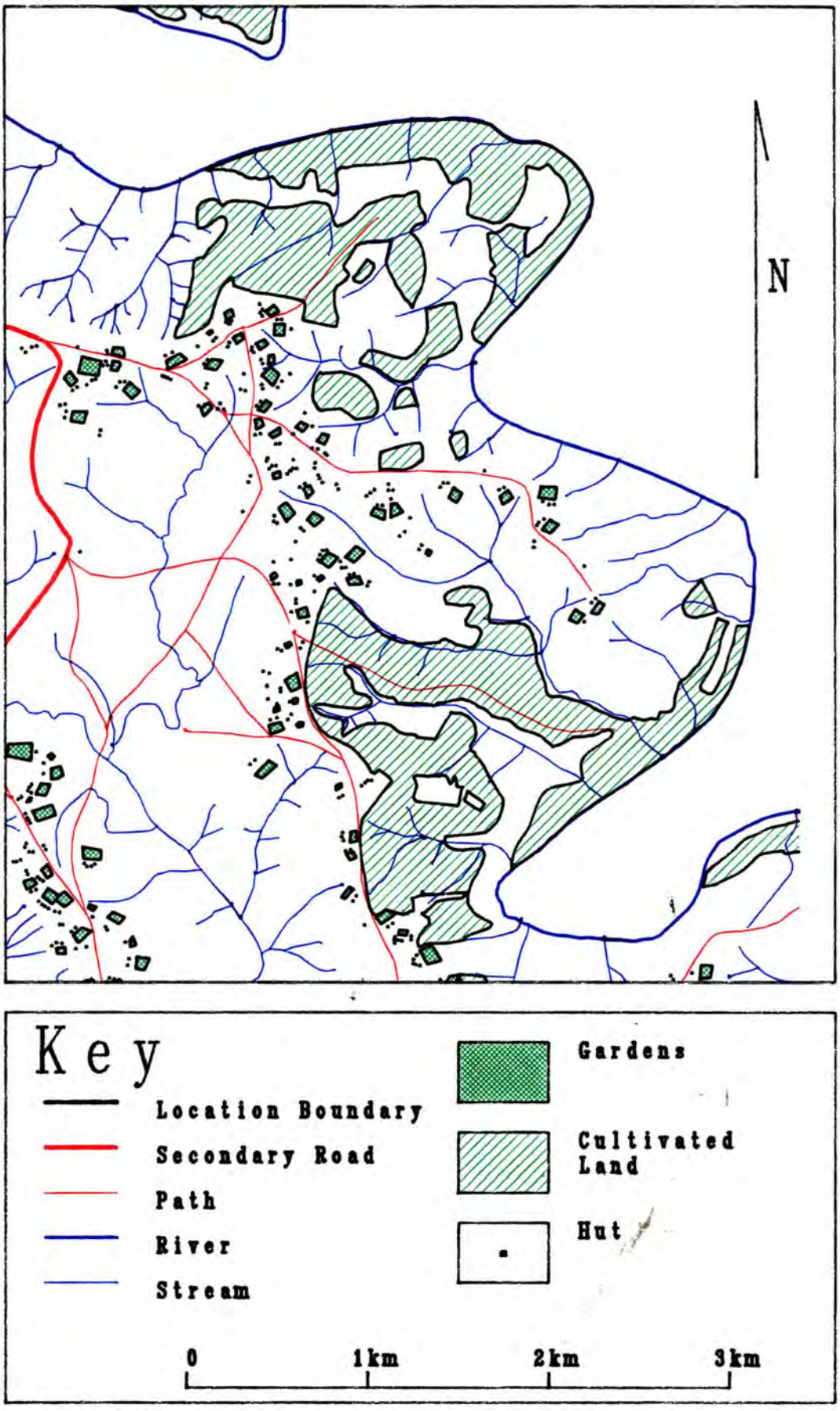

Figure 4.7 Map illustrating the settlement pattern, gardens and fields in Nompa sub-ward, 1962

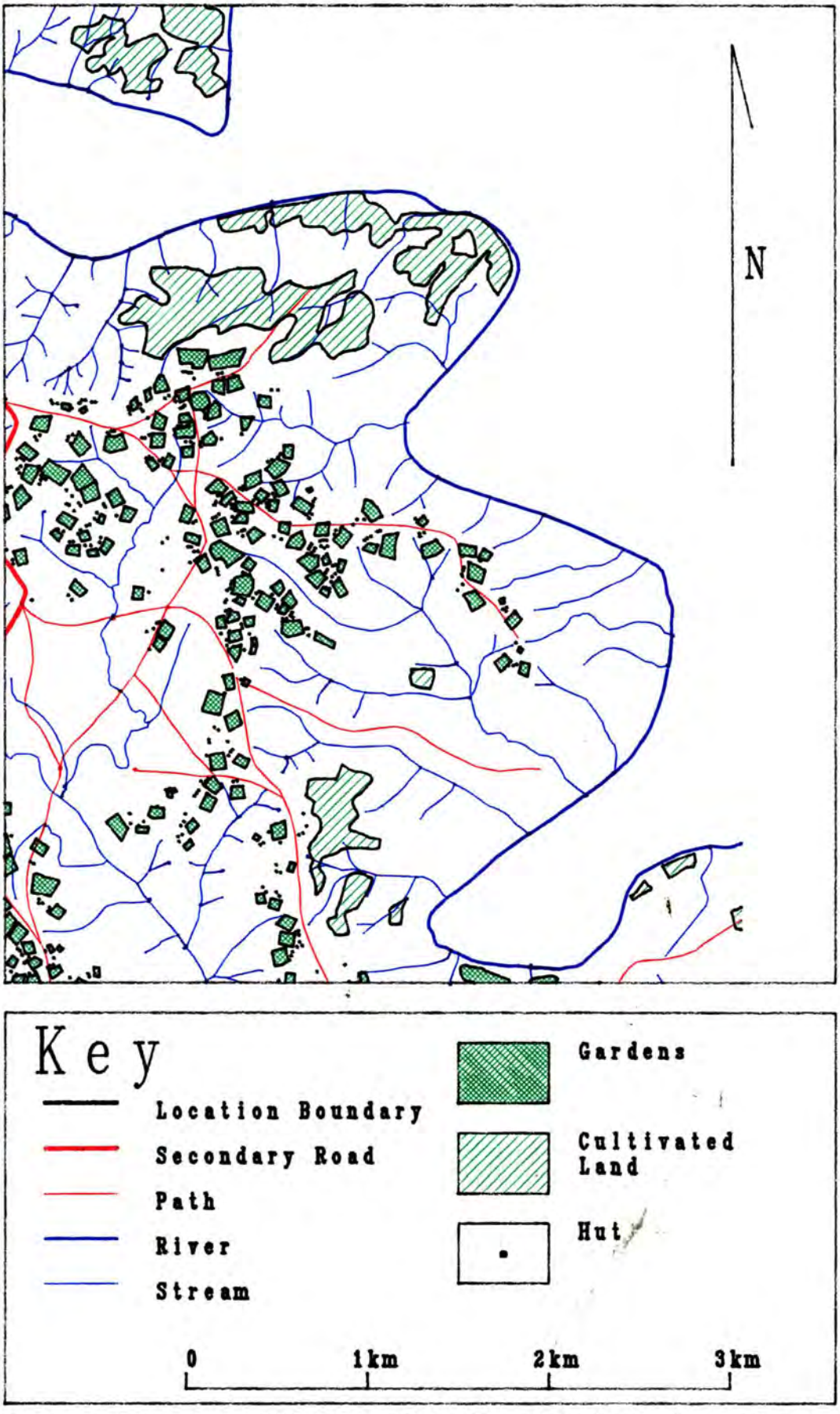

Figure 4.8 Map illustrating the settlement pattern, gardens and fields in Nompa sub-ward, 1982

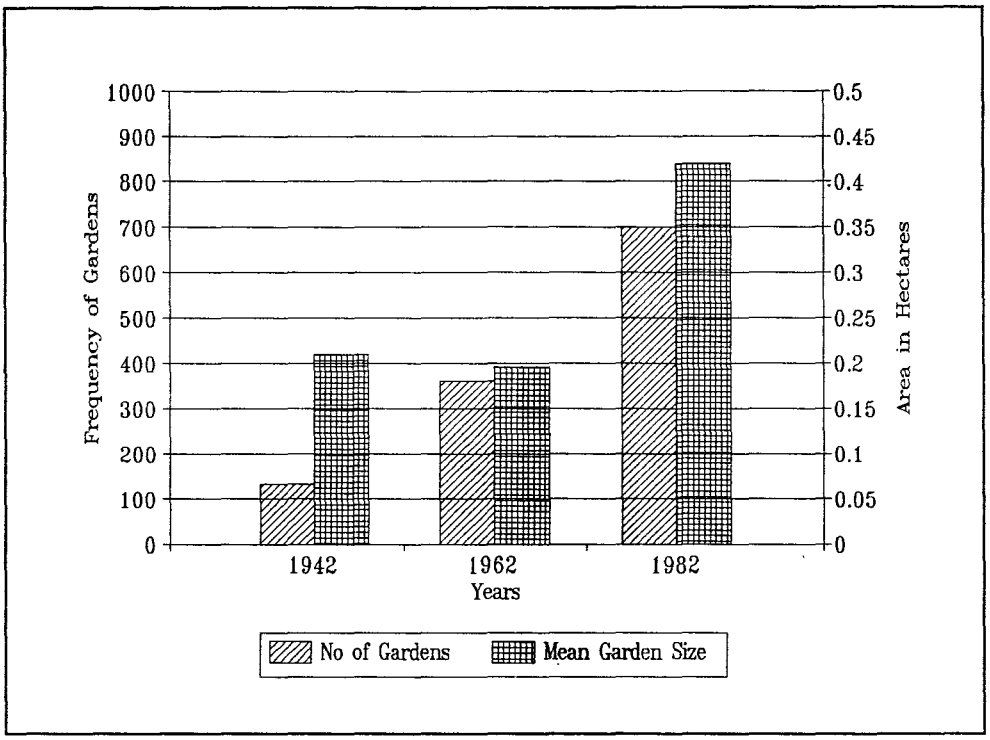

Figure 4.9 Changes in the the number and size of gardens.

Table 4.4 **Mean garden sizes amongst households in each stock enclosure size class and the changes in mean garden size between 1942-1962 and 1962-1982.**

Stock encl.	Mean Garden Size (Hectares)			Changes	
size class	1942	1962	1982	1942-62	1962-82
0	0.15	0.01	0.292	-93	2820
1	0.08	0.16	0.337	100	111
2	0.12	0.17	0.34	42	100
3	0.16	0.25	0.342	56	37
4	0.2	0.19	0.432	-5	127
5	0.31	0.26	0.495	-16	90

The results of the aerial photograph analysis indicate that a number of changes were occurring at the same time and were probably related. Population increased, field cultivation decreased, garden cultivation increased, inequalities and stratification increased and bush vegetation was spreading. It is also evident that the most significant changes occurred between 1962 and 1982 and were probably directly related to the explosive growth in population during this period.

4.4 Discussion

The aerial photography data makes a significant contribution to the analysis of local agricultural, social and environmental conditions. It also documents local responses to socio-economic, political and environmental changes. In the analysis of agricultural change in Shixini, it revealed significant changes in population, stock holdings and cultivation practices since the 1940s.

The most obvious change evident from the aerial photographs was the particularly rapid population growth from the 1960s onwards. This was evident from the hut data. Shixini's population growth follows population growth trends for the African population in Transkei and South Africa (see Figure 3.6). The bulk of this population growth can, therefore, be attributed to natural growth. Apartheid resettlement policies, although they occurred during the 1960s and 1970s, do not seem to have been the major cause of population growth in Shixini. Large scale deportations and resettlements of squatter communities within Transkei did not occur due to opposition from the Transkeian government (Surplus People's Project, 1983). The only area of the Transkei which was affected by these resettlement policies was the Glen Grey area in the north west of Transkei. However, there was a slightly faster rate of population growth in Transkei than in South Africa which may have been the result of influx controls in white South African urban areas and consequent deportations.

One of the probable consequences of this explosive population growth was increasing pressure on limited resources and growing landlessness. Historical records and secondary sources (see chapter 3) show that land had become a scarce resource as early as the 1930s. Massive population growth would only exacerbate this shortage of land. Increasing population densities and closer settlements were another consequence of this growth (see figures 4.6 to 4.8). In addition, Whisken (1991) showed that this population growth increased traffic within Shixini and consequently increased erosion along paths and roads.

The aerial photography data also showed that the number of stock enclosures increased at the same rate as population growth. However, the average size of stock enclosures became smaller. This data suggests that the number of stock per household was declining but that households

strove to retain their livestock. Official livestock and population figures confirm these findings. Figures 3.4 and 3.6 show that cattle and sheep numbers declined gradually while population increased rapidly. Population growth was particularly explosive after the 1950s. Thus, *per capita* stock holdings declined dramatically after 1955 and undermined cultivation. However, the decline in stock numbers did not affect all households in the same manner. The number of households with large stock enclosures remained constant while the number of households with small stock enclosures increased significantly. Given that livestock, particularly cattle, was an important traditional source of wealth, this trend suggests that the majority of the population were becoming poorer while wealthier households were able to retain their wealth and social status.

Despite the reduction in stock numbers after the 1930s, the present data indicates that grassveld deterioration continued. This data showed a large increase in bush within Shixini. Bush will only spread if the grassveld deteriorates (Tainton, 1988). The cause of the deterioration of the grassveld can be found in historical sources. The historical literature and official records indicate that socio-economic and political changes during the nineteenth and early twentieth centuries (see chapter 3) stimulated enormous increases in the number of cattle and sheep in the rural African reserves and eventually lead to overstocking. The introduction of sheep and goats and their subsequent growth in numbers had an additional negative impact on the grassveld. Sheep and goats are more selective grazers than cattle and tend to have a much more detrimental effect on pastures than cattle (Tainton, 1988). Stocking rates reached their peak during the 1930s and thereafter declined, but not sufficiently to eliminate overstocking. Once the grassveld had deteriorated, continued overstocking maintained and probably worsened the poor condition of the grassveld. This overstocking and grassveld deterioration facilitated the spread of bushveld.

Whisken's (1991) study of erosion in Shixini location, mapped from aerial photographs, provides further proof of environmental deterioration. He found that erosion increased between 1942 and 1982. This erosion was found to be largely associated with the increase in paths and road use but also with field cultivation. Steep slopes were not closely associated with erosion despite the very rugged nature of the terrain. This was because much of the erosion was associated with roads which were located on gentle slopes. In addition, the rugged northern areas of Shixini were more densely vegetated with bush which obscured erosion that may have occurred in this area.

A significant reduction in field cultivation, particularly after 1962, was also evident from the photographic data. Whisken's (1991) study produced similar results thus suggesting that the

aerial data on cultivated land was reasonably accurate despite difficulties in differentiating between fallow and recently cultivated land. There are three reasons for the drop in field cultivation which seem most probable. Firstly, the rapid decline *per capita* cattle numbers and the poor condition of the cattle had a negative impact on cultivation due to the restricted use of ploughs and draught oxen in cultivation. Official estimates of maize yields and cattle numbers during the nineteenth and early twentieth century indicate that reductions in cattle numbers had an immediate negative impact on maize yields. In addition, the poor condition of the cattle in the late winter and early spring began to hamper ploughing activities during the 1930s and 1940s. The result was that field productivity declined because ploughing tended to be shallow, was left until later in the season and probably occurred less frequently. Secondly, only men were traditionally allowed to handle cattle and plough arable land. After the 1930s the supply of migrant labour became much more constant and less sensitive to agricultural cycles. This increase in the supply of migrants and in the length of absence, would have had a negative effect on ploughing activities and made it more difficult to cultivate fields. Thirdly, the collapse of the shifting cultivation methods due to land shortages, and the failure to adopt manuring and fertilizing techniques, reduced the productivity of fields, exhausted the soil and encouraged rural small-holders to abandon their fields. In all probability, these three factors acted in combination to reduce field cultivation and productivity in Shixini.

The expansion of garden cultivation seems to have been a response by the rural population to the declining productivity of fields, in turn a result of the changing environmental and socio-economic conditions mentioned above, growing poverty and a consequent lack of resources. Population growth and increasing landlessness also encouraged garden cultivation. All households had a right to a residential site with a garden. According to De Wet and McAllister (1983) gardens were smaller, fenced and much closer to homesteads than fields. They were therefore easier to plough, weed and manure and required less labour to cultivate. Fencing also protected garden crops from damage by livestock while fields remained unfenced and susceptible to damage by undernourished and poorly herded livestock. Intercropping within gardens also helped to maintain soil fertility and limit erosion while commonly practised mono-cropping in fields hastens soil exhaustion. Another feature of gardens in Shixini was that the boundaries of these gardens were not fixed. De Wet and McAllister (1983) note that the size and location of these gardens were continually adjusted. This was a very similar practice to the traditional shifting cultivation methods aimed at maintaining yields. The effectiveness of these cultivation methods in maintaining soil productivity was confirmed by the results of a soil analysis conducted in Shixini by Berchmore (1988) which showed that fertility levels were much higher in gardens than in fields. Garden cultivation was, therefore, a far more intensive method

of cultivation, which made more efficient use of household resources, assisted in the long-term maintenance of soil productivity and had a less detrimental impact on the land.

The photographic data also confirms Simkins (1981) argument that there were two periods of agricultural decline within Shixini during the period 1930 to 1985. Simkins (1981) found that the decline in *per capita* agricultural output was relatively slow between the 1930s and mid 1950s and decreased much more rapidly thereafter. Similarly, the aerial data showed that during the first stage from 1942 to 1962, there was a growth of garden cultivation and a slight decline in the area of fields under cultivation which suggests that people were beginning to depend on garden cultivation but still relied quite heavily on field cultivation. Between 1962 and 1982 on the other hand, the proportion of households cultivating gardens and the average size of these gardens increased dramatically while the area of cultivated fields decreased quite significantly. This suggests that gardens began to replace fields rather than simply supplementing field cultivation during this subsequent period. This change in agricultural practices appears to be a direct result of rapid population growth and growing poverty.

Despite the move towards more intensive garden cultivation, the total maize output has declined since the 1930s (see Chapter 3). This has probably resulted, in part, from the overall reduction in the area of land cultivated and the relatively small area of garden cultivation (see Figure 4.9).

It is also evident that similar processes were occurring in betterment areas. Whiskens' (1991) study of a betterment area adjacent to Shixini, namely, Nqabarana location, revealed that population increased in the same manner, field cultivation declined and garden cultivation increased. However, the move to garden cultivation seems to have begun at an earlier date than Shixini (see Table 4.5). In addition, betterment seems to have inhibited the continued expansion of garden cultivation and slowed down the decrease in field cultivation after 1962 (see Table 4.6). The relocation of fields onto gentler slops in an area adjacent to the settlement area may have encouraged the continued cultivation of fields due to the close proximity of the new fields to homesteads, and with higher soil fertility levels. In addition, the confinement of settlements within densely populated villages with fixed plot boundaries limited the size of gardens and prevented changes in garden boundaries. The expansion of garden cultivation was thus limited and the necessity of field cultivation reinforced. However, despite the relocation of fields, field cultivation in Nqabarana continued to decline after the implementation of betterment. This suggests that similar processes of agricultural decline were occurring in Nqabarana. In addition, the cultivation of virgin soil would have been an expensive and difficult task which many households would have had difficulty undertaking due to the poor quality of the cattle and the

absence of so many men. The trends within Nqabarana suggest then that low soil fertility was probably not the major factor inhibiting field cultivation in Transkei's rural areas.

The data on household livestock holdings and cultivation practices in Shixini also indicated that there were very significant inequalities within the community. One of the obvious trends was that the chief and headmen households were amongst the wealthiest in the community and

Table 4.5 The percentage increase in garden cultivation between 1942 and 1982.

Time Period	Shixini % increase in Garden cultivation	Nqabarana % increase in Garden cultivation
1942 - 1962	165	173
1962 - 1982	281	141

Table 4.6 The percentage decrease in field cultivation between 1942 and 1982.

Time Period	Shixini % decrease in Field cultivation	Nqabarana % decrease in Field cultivation
1942 - 1962	4.8	30.9
1962 - 1982	96.7	59.6

remained so throughout the period under study. However, there were a significant number of other wealthy households whose fortunes seemed to fluctuate. These oscillating fortunes were probably related to the development cycle of the household (Beinart, 1982; De Wet and McAllister, 1983; Heron, 1990). For example, when households were initially established they tended to be very poor, cultivate small areas and rely very heavily on migrant wages. The wife's ability to engage in cultivation during this period was also undermined by child rearing responsibilities. Household production peaked once the household had managed to build up a herd through the investment of migrant earnings in livestock, and the household head could return to his homestead. This allowed him to get more involved in household production, expand cultivation and build up his wealth and influence in the community. Additional wealth could also be accumulated once the children reached adulthood and began to contribute to household income. Household production and wealth then went into decline when the head of the household and his wife became old and less able to participate in production and the

children left the household to establish their own homesteads. Thus except for the small class of chiefs, headmen and very wealthy residents, the rest of the population seemed to fluctuate between the very poor and middle income classes.

4.5 Conclusion

In conclusion then, the aerial photographic data was found to confirm trends evident in historical and official sources of agricultural data on Transkei's rural areas. Firstly, the decline in livestock numbers as enumerated in the official statistics was evident in Shixini in the form of a decline in the size of stock enclosures. Households continued to invest in livestock but the size of livestock holdings decreased. Secondly, the total area of land cultivated declined thus reflecting the diminishing crop production evident in official estimates. Thirdly, the rapid decline in field cultivation after 1962 coincided with the rapid increase in population during this period. It was also evident that as population increased, the proportion of poor households with little or no livestock increased. The ability of these households to maintain field cultivation would have been progressively eroded as poverty increased. This close association with population growth suggests that Shixini households continued to cultivate fields until they became unable to cultivate them and that dwindling yields simply encouraged the shift away from field cultivation. Finally, the abandonment of fields then coincided with and probably prompted the growth of garden cultivation. All households had access to land for gardens and the cultivation of gardens required less effort and fewer resources.

Data taken from the aerial photographs proved, therefore, to be a very valuable means of examining the impact of these changing conditions on the specific community under study and in revealing how the rural population responded to these changing environmental and socio-economic conditions. In summary, the impact of these changes was to increase the pressure on limited resources, increase inequalities and promote environmental degradation. In response to these constraints the rural households seems to have changed and intensified their cultivation practices in an attempt to maintain yields, use available resources more efficiently and minimise detrimental impacts on the environment. Uncovering the response of this rural community was probably the most important contribution the land-use analysis made to this study. Historical research often fails to reveal such responses due to the lack of written records and the scarcity of oral studies.

However, a number of issues require further clarification. For instance, were socio-economic constraints greater than environmental ones? How did local residents perceive the changes and

what were the most important or common reasons for the changes? Did poor households have different cultivation practices from wealthy households? These are the questions addressed in the following chapter.

Chapter 5: Questionnaire Survey

5.1 Introduction

Chapters three and four showed that agricultural productivity in Shixini had been declining since the 1930s due to dwindling household resources, the increasing absence of men, diminishing opportunities for agricultural trade and environmental degradation. This agricultural decline involved decreasing livestock numbers, particularly cattle and sheep, diminishing maize and other crop yields due to reduced productivity and finally a reduction in the area of land under cultivation. The local response to these changing conditions was to cultivate more intensively by abandoning fields and expanding garden cultivation.

What remains to be examined are local perceptions of agricultural change and obstacles to cultivation. It was also unclear whether there were any significant class differences in agricultural practices. To address these questions a questionnaire survey of Shixini residents was undertaken to examine household size, structure and wealth along with agricultural practices and perceptions of change and difficulties. This chapter focuses on the questionnaire survey and its contribution to this study. The methods used will be discussed in the next section, and followed by an outline of the results. The fourth section, the discussion, will attempt to assess the significance of the results and the contribution they make to the overall study.

5.2 Methodology

A questionnaire survey was the method chosen as the most appropriate means of collecting agricultural and socio-economic data at a household level. The questionnaire included 36 fixed choice and open-ended questions on household characteristics, migrants, income sources, trade, expenditure, livestock, grazing, land use and cultivation practices, local perceptions of change and constraints on cultivation, outside intervention and the probability of the children of today engaging in small-holder farming when they grow up. A copy of the questionnaire can be found in Appendix 2. Detailed questions about the type of agricultural tools and inputs used by households were not included in the questionnaire for two reasons. Firstly, this detailed descriptive data had already been collected by McMillan during 1989. Secondly, the questionnaire covered a wide range of issues thus making it necessary to avoid collecting very detailed information.

Direct questions about the amount of income received by each household were avoided due to the difficulties of quantifying rural incomes. Most rural residents rely very heavily on migrant

remittances for the bulk of their income. These remittances are received in varying amounts and at irregular intervals. In addition many households rely on the sale of livestock and meat as well as on occasional local employment for income. Finally, high rates of illiteracy amongst rural residents would make it difficult to obtain reliable income figures.

5.2.1 Sampling Procedure

According to a study undertaken by the Institute for Social and Economic Research at Rhodes University in 1987/8 there were 846 households in Shixini. In the present survey a six percent sample (50 households) were interviewed. The number of households sampled was limited by a lack of financial resources and time. The sample was randomly chosen but it attempted to ensure that the ten sub-wards within Shixini were proportionally represented. These sub-wards, the proportion of the total Shixini population which they encompassed, and the number of households sampled in each ward are listed in Table 5.1 below and illustrated in Figure 5.1.

Table 5.1 The number of households sampled in each ward relative to its size.

Shixini sub-wards	Percentage of Shixini Households	No. of Households Sampled
Folokhwe	8	4
Ndelibanzi	4	2
Jotelo	12	6
Nompa	14	7
Fumbatha	10	5
Nandluntshe	12	6
Nqwevu	8	4
Kwitshi	12	6
Vulani	10	5
Khamisa	10	5

The location of each of these sub-wards and the sampled households are indicated in Figure 5.1 These households were randomly chosen, using a grid reference and a random list of numbers,

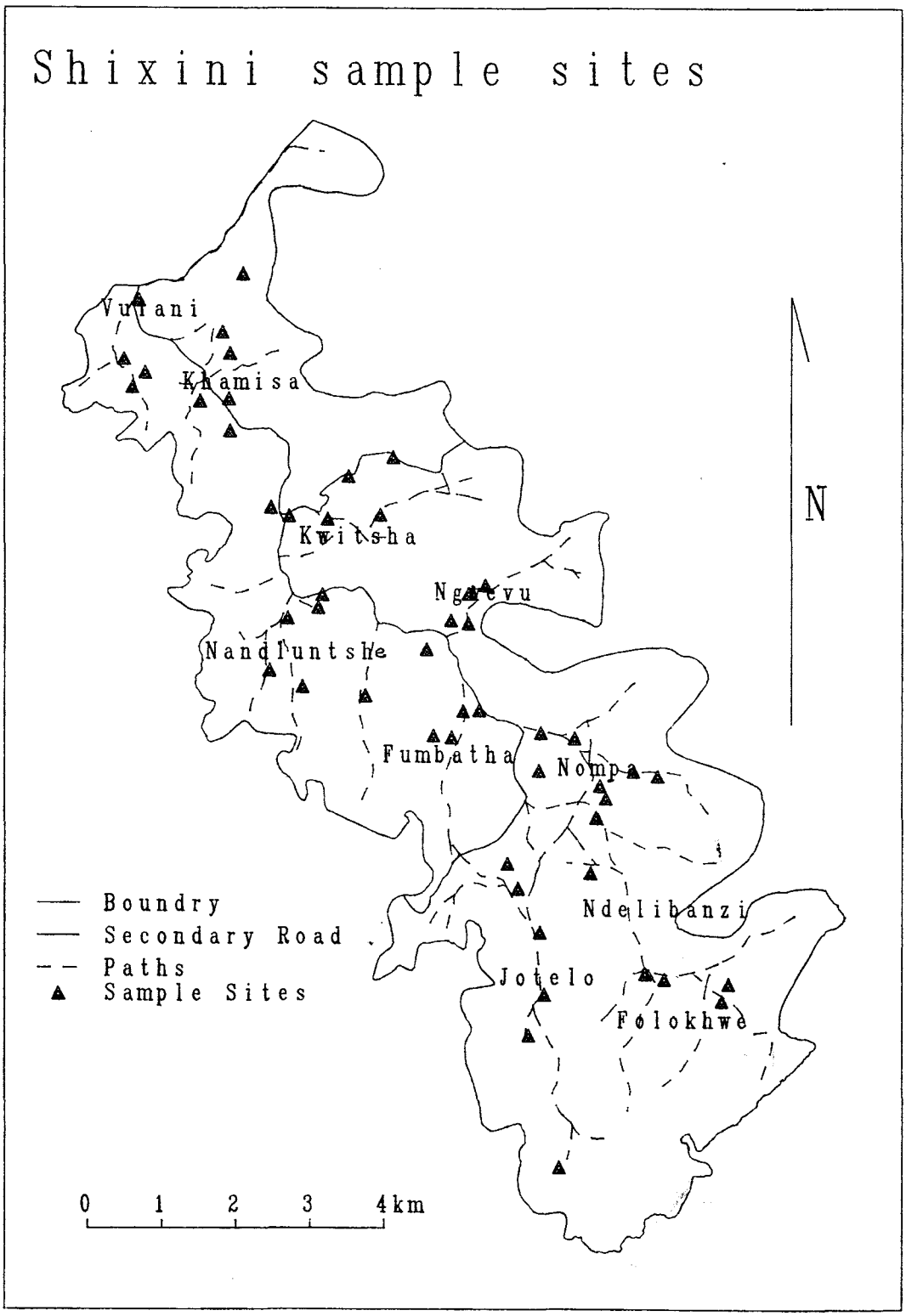

Figure 5.1 Map showing Shixini sub-wards and sample sites.

from the 1982 map of Shixini prepared from aerial photographs. However, some homesteads were abandoned when the homestead head died and new homesteads were set up every year, so that it was sometimes difficult to identify the precise household in the field. In addition, there were some households who were not prepared to answer questions and others who lived in urban areas and were not resident in Shixini at the time. When such difficulties were encountered the household nearest to the randomly selected homestead was interviewed.

5.2.2 Data Reduction Methods

Once the descriptive data on household characteristics and agricultural practices had been collected, the responses were categorised and labelled and then entered into a Quatro Pro spreadsheet. The data was then summarised in tabular and graphical form. The only descriptive information which required transformation and quantification was the data on household income. No quantifiable income figures were collected but the data on income sources and migrants were used to draw up an income index for each household. To begin with, the various sources of income were given a score (see Table 5.2 below). These scores were based on information given by the respondents on their most important and second most important sources of income. Socio-economic studies of rural Transkei undertaken by Osmond *et al.* (1983) and Moll (1984) were also utilised.

Table 5.2 Scores for each source of income.

Income source	Score
Permanent local employment	7
Remittances from Transkeian migrants	6
Pension or disability grant	5
Remittances from other migrants	4
Occasional local employment	3
Selling livestock, crafts and crops	2
Selling livestock and crops or crafts	1

Permanent local employment was given the highest score because the employee remained resident in Shixini and the complete salary was available for use by the household. Remittances from Transkeian migrants was given the next highest score because these migrants tended to

return home very regularly and contribute far more substantial amounts to household income than normal migrants. Most of the households who received income from this source appeared to be far more wealthy than most other households. In addition households who received income from this source tended to rank this source as more important than pensions. Pensions and disability grants were given the third highest score because most households who received pensions and migrant remittances ranked pensions as more important than remittances, except when the migrant worked in the Transkeian Civil Service. Remittances from migrants working in South Africa were given the fourth highest score. The two lowest scores were given to occasional local employment, usually in weeding, and the selling of agricultural produce. Occasional local employment was ranked higher than the selling of produce as it was usually identified as more important than selling. The income index for each household was therefore dependent on a variety of household income sources and the number of migrants and pensioners in the household.

However, current income was not an accurate reflection of household wealth. According to McAllister (1978) migrant workers do not usually spend all of their economically active adult years working as migrants. Therefore current income would not take into account income earned by adults who had stopped working as migrants. Rural households in the Transkei invest much income in traditional forms of wealth such as cattle and other livestock. Given these factors it was also necessary to take livestock holding into consideration when calculating the relative wealth of each household. The income index was then combined with the livestock holdings of each household to derive their wealth index. Pigs and chickens were not taken into account in this index.

Once the data had been entered onto a spreadsheet it was possible to begin looking for relationships between household characteristics and agricultural practices. Initially an attempt was made to undertake a categorical data analysis. However, due to the small size of the sample and the number of categories used, it was not possible to ensure that each category had a minimum of five households. Consequently, the household and agricultural data were simply plotted against one another on XY graphs to see if there were any relationships. For example, the data on household size, the number of able-bodied adults and consumers, household income and livestock holdings were plotted against the area of land cultivated by each household.

When it became obvious that the only individual household characteristic which appeared to have an influence on the area of land cultivated was the number of cattle owned, an attempt was made to combine the other household characteristics to find out what influence they had on cultivation practices. Initially a cultivation probability index, which took factors such as the

number of able-bodied adults, the number of consumers and household income into consideration, was calculated for each household. The formula for the cultivation probability index was as follows:

$$CPI1 = A \times Cn \times I$$

where: *CPI1 = Cultivation Probability Index*

A = Number of able-bodied adults

Cn = Number of consumers

I = Household income

Each of the components of the index were then weighted so that components with small values would be given a value below one, the median, and would detract from the index, while an excess of any component would be valued above one and would increase the index. The next value above the median was given a value of 1.2, and the next 1.4 so that each value above the median increased by an increment of 0.2. The opposite occurred with all values below the median. For example the median number of able-bodied adults in the sample was two, so this number of adults was given a value of one. If a household had only one able-bodied adult then it would receive a value of 0.8 while a household with five able-bodied adults would be given a value of 1.6. The scores for each component of the index are tabulated in Appendix 3, Table A.3. Once all the values for each component of the index were calculated the cultivation probability index for each household could be determined.

A second Cultivation Probability Index (CPI2) was also calculated. This index added livestock holdings to CPI1 and was calculated as follows:

$$CPI2 = A \times Cn \times I \times Ct$$

where: *CPI2 = Cultivation Probability Index*

A = Number of able-bodied adults

Cn = Number of consumers

I = Household income

Ct = Number of cattle owned

The scores for each component of this index are tabulated in Appendix 3, (Tables A.3 - A.6).

The data was also analysed to determine how much effort each household actually invested in cultivation during the 1990/1 growing season. As indicated in the equation below, the amount of effort invested was expected to be determined by considering the method of turning the soil, the number of times fields and gardens were ploughed, the number of times fields and gardens were weeded, and the method used as well as the area of land cultivated. These factors were quantified and ranked so that a value for cultivation effort could be calculated (see Tables A.4-A.6 in Appendix 3).

$$CEI = PE \times WE \times Area$$

where: *CEI = Cultivation Effort Index*

PE = Ploughing effort

WE = Weeding effort

Area = Area of land cultivated i.e. size of garden and average size of fields as calculated by McMillan (1989).

Ploughing effort was determined by the method of turning the soil and the number of times a garden and/or field was ploughed (see Table A.4). Hoeing and ploughing were the two main methods of turning the soil. Some households however, did not turn the soil or used a planter instead of ploughing. Hoeing was given the highest score of five because it was highly labour intensive. The different ways in which ploughing could be accomplished was also taken into consideration. Firstly, a household could plough their garden or field themselves with the use of a cattle plough or planter. This was the most labour intensive method of ploughing and was given a score of three. The use a ploughing company was given a score of two and hiring a tractor a score of one. These scores were then multiplied by the number of times the garden and/or field was ploughed.

The same method was used for the calculation of a household's weeding effort. Each household was given a score according to whether they used a cultivator or not and for the method they used. There were three methods. The most labour intensive method was for the household to weed their garden and field themselves. The next most labour intensive method was the hiring of labour. This usually involved household members as well. Finally, households could call together a work party to undertake the weeding. The scores for each of these methods depending on whether they used a cultivator or not are listed in Table A5.

Finally, the area of land cultivated was calculated from the measured area of gardens and whether a household cultivated a field. McMillan's (1989) average field size was used for all households who cultivated a field. Once the total area cultivated for each household had been calculated, a number of size categories were chosen, and each household given a score depending on which category they fell into (see the size categories and scores in Table A6).

5.3 Results

This section begins by describing current household size, structure, and income characteristics as well as the agricultural practices, local perceptions and trading patterns of the sample. It then goes on to discuss the relationships which were found.

5.3.1 Family size and structure

The total number of people amongst the 50 sampled households was 367. The average family size was 7.34 people with a range from 2 to 15. The average number of huts per household was 2.6 and the average number of occupants per hut was also 2.6.

Table 5.3 summarises the percentage of households within each category of family type. The three generational extended family type (Nuclear and Agnatic) was the most common with two generational nuclear families being the next most common. A significant proportion of households (28 percent) were headed by women.

Table 5.3 The percentage of households within each family type. N = 50.

Family types	Households (%)	Total
Nuclear: 1 generation	2	
2 generations	40	44
Extended: Nuclear (3 generations)	24	
Agnatic (2 generations)	4	
Agnatic (3 generations)	24	52
Complex Extended: 2 generations	4	
3 generations	2	8

The sample population pyramid (excluding migrants) in Figure 5.2 is skewed in favour of females, especially in the younger age groups. This pyramid shape is typical of rural areas in developing countries. It suggests that there were higher rates of pre-natal and child mortalities amongst males than females, probably resulting from poor pre-natal hygiene and living conditions. It is also possible to infer that the birth rate and the infant mortality rate were relatively high. The crude death rate was also high.

The two dependency ratios calculated were not very high. The first ratio of 1,9 : 1 considered elderly persons earning a pension as non-dependants. The second ratio categorised these pensioners as dependants and yielded a much higher dependency ratio of 2.7 : 1. This second ratio also had a much greater degree of variability, ranging from zero to six.

There were a large number of migrants amongst the sampled households. They numbered 50 in total, 4 females and 46 males. The average number of migrants per household was one. Twelve households had no migrants while one had four. While only a very small number of women were migrants, 66 percent of the males between the age of 15 and 44 were migrants. This feature is reflected in the sample pyramid which is highly skewed towards the female side.

As indicated in Table 5.4 below most migrants, 45 percent, worked on the mines in the Transvaal and Orange Free State. Cape Town was the next most common place of work. The

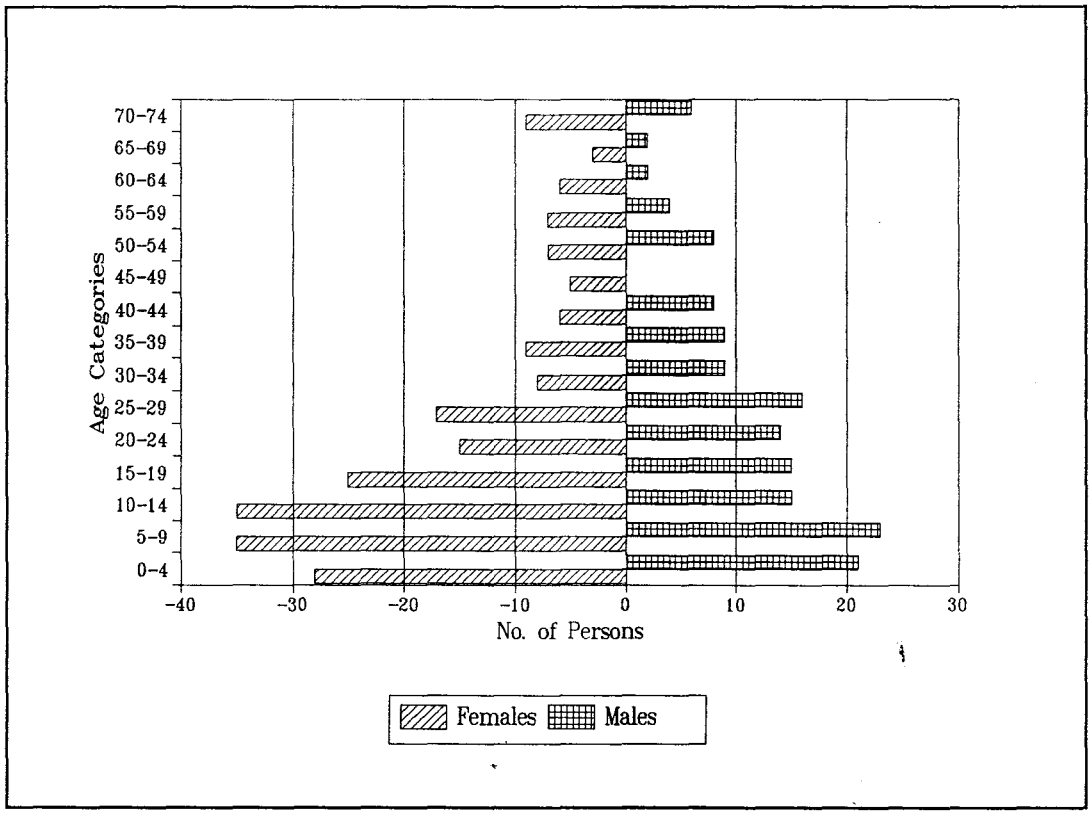

Figure 5.2 ***Population Age pyramid for the sample of 50 Shixini households.***

popularity of Cape Town was probably due to the regular weekly bus service between Shixini and Cape Town which has operated in the area for a number of years. Some men also mentioned that wages were higher in Cape Town than on the mines. There were also a number of migrants employed in the Transkei, usually as Civil Servants or teachers.

As indicated in Table 5.5, the vast majority of migrants returned to Shixini once a year and were therefore not able to assist with farming activities for most of the year. The majority of these migrants,

Table 5.4 **The percentage of migrants working in each of the specified areas. N = 47.**

Migrant's place of work	Migrants (%)
Witwatersrand	43
Cape Town	36
Transkei towns	13
South African towns	6
Orange Free State	2
Eastern Cape Province	0

53 percent, returned to Shixini for a period of two to three weeks during December and January (Table 5.6). Most of the other migrants in the sample returned for shorter periods. Only 8 percent of migrants returned home for periods which would allow them to assist with farming activities. Table 5.7 shows that most of these migrants assisted with farming either financially or by helping with the work while they were at home.

Table 5.5 **Frequency of migrant visits. N = 47.**

Frequency of Visits	Migrants (%)
Weekly	4
Monthly	2
On occasional weekends	2
On public holidays	2
Every couple of months	0
Twice a year	2
Annually	84
No visits yet (new migrant)	4

In conclusion, the results discussed above indicate that most families in Shixini were large extended families, with at least one migrant who remained absent for most of the year and was usually unable to assist with cultivation in any significant manner, except financially.

Table 5.6 The length of migrants visits. N = 47.

Length of return visits	Migrants (%)
A weekend	13
One week	2
Two to three weeks	57.5
One month	15
Two to three months	6.5
Normally three weeks but occasionally five months	2
New migrant not yet returned	4

Table 5.7 The percentage of migrants assisting with farming in various ways. The number of migrants was 50.

How migrant assists with farming	Migrants (%)
Physical assistance	40
Financial assistance	38
Not specified	11
Does not assist	9
New migrant not yet returned	2

5.3.2 Household Income

The variety of income sources and the number of households deriving income from each source are tabulated in Table 5.8. Migrant remittances were the most common source of income followed by pensions. Each respondent was then asked to rank their first and second most important sources of income. As indicated in Table 5.8, migrant remittances were the most important income source for 48 percent of households, pensions and disability grants for 40 percent. Occasional local employment and the selling of local produce were also important but were seldom more important than remittances and pensions. Most of those who ranked

occasional local labour or the selling of produce as the most important income source did not receive migrant remittances or pensions.

Table 5.8 Household income characteristics. N = 50.

Sources of income	Households (%)	Most important income source (%)	Next most important income source (%)
Migrant remittances	74	48	31
Pensions	46	34	14
Disability grants	8	6	3
Selling produce	18	4	17
Selling services	4	0	0
Occasional wage labour	40	4	31
Permanent local employment	4	2	3

This information on income sources was then combined, ranked and transformed to compute an income index for each household. These income indexes ranged from 5 to 20 units with the median income being 10. The index shows that there were fairly significant income inequalities within the community (see Figure 5.3). Only a small minority of households could be said to be financially healthy. The majority were poor. For example one of the poorest households sampled had eight children under the age of 14 and two adults, the head of the household and his wife. They had previously relied on migrant remittances from the head of the household but he was unemployed at the time of questioning. Their only other source of income was from occasional local employment in other peoples' fields and gardens. They also had no livestock except two pigs and three chickens. On the other hand, one of the richest households sampled had seven household members between the age of 10 and 34 years as well as two elderly members. Two of the sons were migrants in South Africa's major centres and remitted wages back to the family and one of the elderly persons in the family received a regular pension. They had four cattle and two pigs and earned income from the sale of produce.

A wealth index which combined the income index with indices of cattle and other livestock (excluding pigs and chickens) was also computed. This was done to ensure that traditional

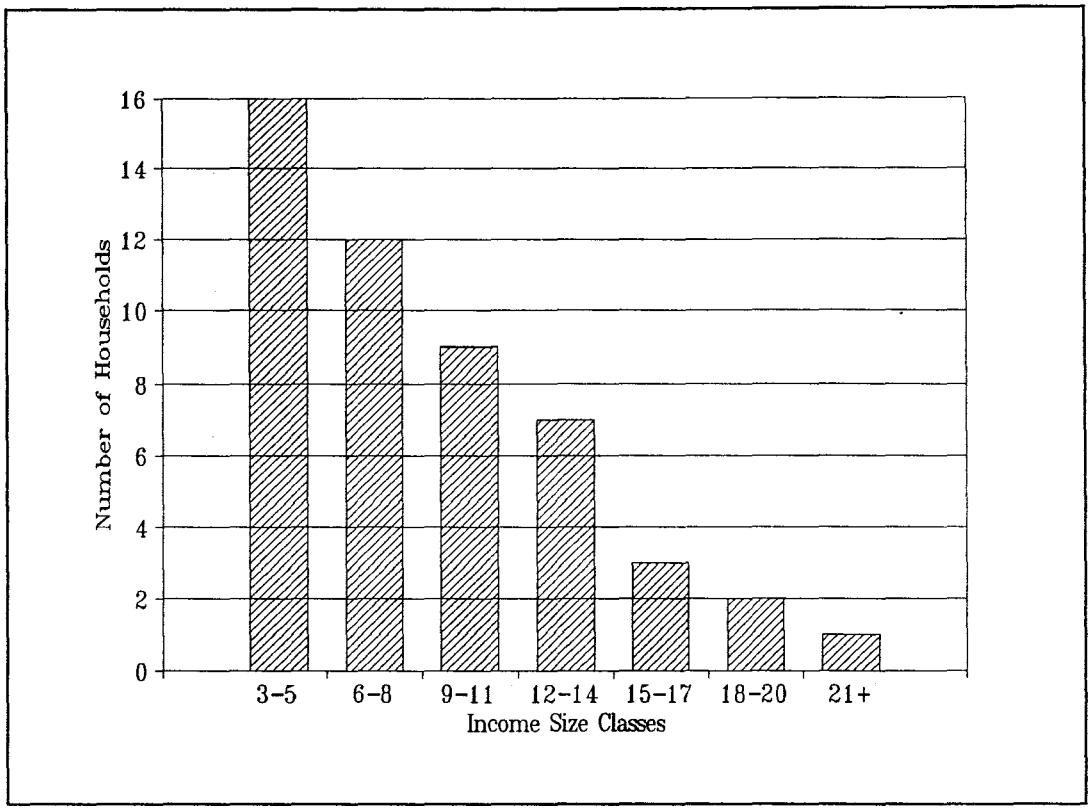

Figure 5.3 ***The number of households in each Income Index size class. N = 50.***

forms of wealth such as cattle and other livestock could be taken into account. This index revealed an even greater gap between the very poor and the rich, due largely to the significant inequalities in livestock holdings (see Figure 5.4). It was also clear that a household's wealth index was related to its stage of development (see Table 5.9). New or young households had low wealth indices which seemed to increase as the household matured and reached the stage when the head returned to the household and children became adults contributing to household income. However, as the head of the household and his wife aged and the children got married and left, the household resources diminished and wealth decreased.

In summary then, it is evident that there were significant inequalities within Shixini. The gap between the rich and the poor was enormous. The poorest households tend to have had very little income and little or no livestock. The rich, on the other hand, tended to have much higher incomes and/or large numbers of livestock. Most households were very poor and depend largely on migrant remittances and pensions for their income. These major income sources were supplemented by occasional local employment and the selling of produce. The rich were a small minority of households who tended to have more than the average number of migrants, migrants

who worked in the Transkei Civil Service or locally employed persons. However, household wealth also fluctuated as the household aged and changed in structure.

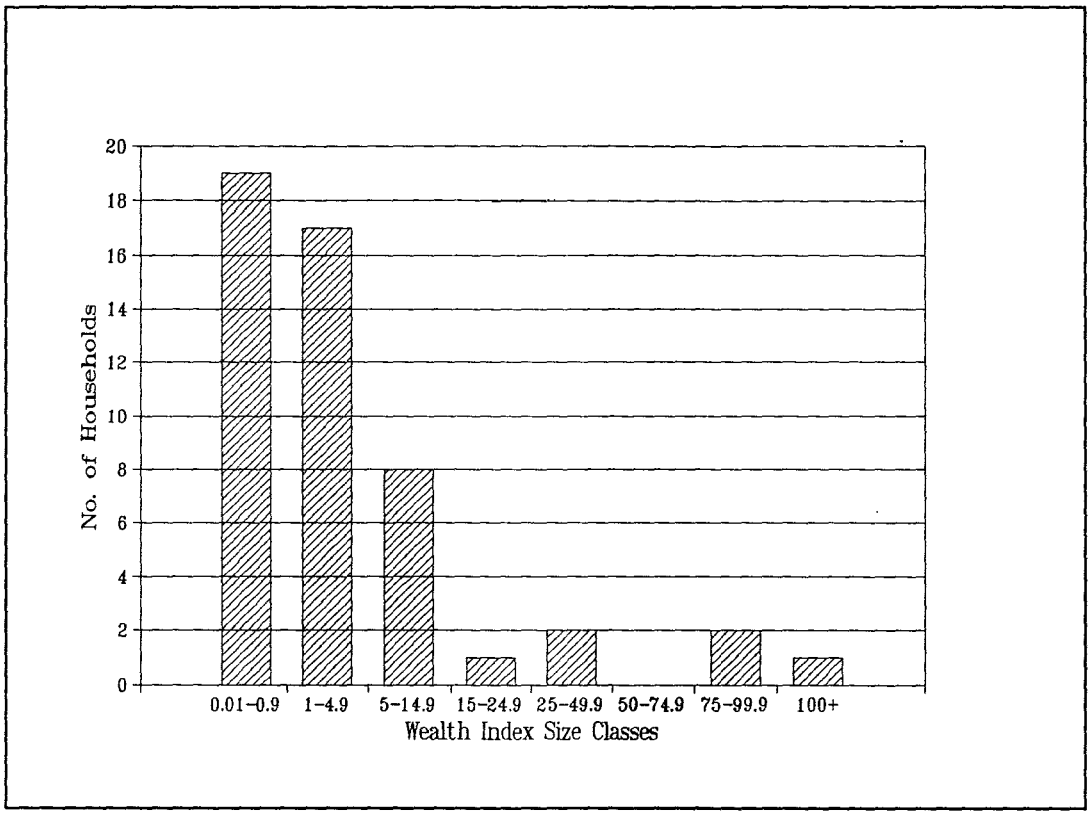

Figure 5.4 *The number of households in each Wealth Index size class. N = 50.*

Table 5.9 **The relationship between the stage of household development and the household's wealth index.**

Stage of household development	Mean household wealth index	Households %
Initial period of establishment and growth	8.34	42
Peak in household development but still poor in resources	10.4	28
Peak in household development and rich in resources	13.48	24
Period of Decline	1.65	6

5.3.3 Local Trade

Table 5.10 below shows that the vast majority of households were dependant on regular purchases of basic foods to feed their families. This information suggests that subsistence production was not sufficient to meet the needs of most households.

Table 5.10 Basic foods purchased from traders. N = 50.

Types of food purchased	Households (%)
Maize	98
Mealie meal	98
Samp	94
Small groceries	86
Sugar	66
Flour	56
Cabbage	26
Potatoes	12
Beans	6
Spinach	2

As indicated in Table 5.11 below these purchases were made on a very regular basis ranging from twice every month to once every two months. The intervals listed in Table 5.11 were the only shopping intervals specified by the respondents. The two month shopping interval corresponds with pension payments.

Table 5.11 The percentage of households purchasing food at different intervals. N = 50.

Frequency of purchases	Households (%)
Twice a month	12
Once a month	56
Every two months	32

Table 5.12 shows that 54 percent of households said that they had experienced periods during the year when they needed to buy more food than normal. Contrary to expectations, the data does not support the idea that households needed to buy more food during the planting season when the previous years stores had been consumed. Feasts, Christmas, migrants return visits which often coincide with Christmas, and irregular incomes were the most common reasons for periods of higher food purchases. This provides further evidence of the heavy reliance on basic food purchases.

Table 5.12 Periods of above average food purchases. N = 44.

Periods of increased food purchases	Households (%)
No such periods	46
When they had feasts	18
During the christmas season	10
When they had more money	10
During migrants' visits	8
During the planting season	6
During peak working periods	2

Table 5.13 below shows that most households have had to increase their food expenditures over time. There are a number of reasons for this trend but the most important seems to be reduced harvests, as a result of declining cultivation and low productivity.

It was also evident from Table 5.14 below, that the vast majority of households invested a portion of their income in the purchase of agricultural implements and inputs. However, insecticides, veterinary medicines and fencing poles were not commonly purchased. This was because insecticides and veterinary medicines were difficult to obtain. Fencing poles were available locally and did not need to be purchased. The majority of households bought agricultural tools i.e hoes, ploughs. etc. and fencing wire. This was confirmed by field observations which indicate the standard use of wire fencing around gardens. Seed and fertilizer were the next most common purchases. However, information on the use of fertilizers in gardens and fields, discussed later in this section, indicated that fertilizers were bought in relatively small quantities and that manure was often used as a substitute.

Table 5.13 The reasons for increased food expenditures over time. N = 50.

Reasons of increasing food expenditures over time	Households (%)
Cultivating less land now	34
Food is more expensive now	18
Poor harvests	16
No reason given	14
Growing family	9
No increase in food purchases	9

Table 5.14 The percentage of households purchasing a variety of agricultural inputs. N = 50.

Agricultural inputs purchased	Households (%)
Agricultural tools	98
Fencing wire	94
Seed	74
Fertilizer	74
Weeding	70
Ploughing	66
Veterinary medicines	52
Insecticides	38
Fencing poles	20

Households also spent a portion of their income on ploughing and weeding. This might involve hiring a tractor or labour and providing beer and food to a work party or ploughing company.

Respondents also made regular livestock purchases (see Table 5.15). Pastoralism has a long tradition amongst the Xhosa people. Cattle were traditionally the most important form of livestock, but horses, sheep, goats, pigs and poultry have also become common over the last century. All these types of livestock are purchased by Shixini residents today. The sample

survey revealed that the vast majority of households purchase pigs and chickens with cattle being the next most commonly purchased livestock. This was probably because most poor households could only afford pigs and chickens and traditional values place greater importance on cattle than sheep and goats.

These data indicate that there was a significant local trade in livestock between residents. All Shixini households, except one, bought their livestock from local residents but 20% of the households also bought livestock from white farmers. Respondents did not purchase livestock from traders in Shixini or Willowvale despite the sale of livestock by traders in Willowvale. There are two possible reasons for this, either the traders prices were too high or the livestock was not delivered to rural areas.

Table 5.15 The percentage of households purchasing a variety of livestock. N = 50.

Livestock purchased	Households (%)
Pigs	94
Chickens	84
Cattle	70
Goats	52
Sheep	32
Horses	32
Other: i.e. ducks	16

As already discussed in chapter three, there was quite significant trade within Transkeian rural areas during the nineteenth century and the first few decades of this century. Table 5.16 below gives an indication of the variety of local produce that respondents remembered trading with traders in the past. The most significant trade seems to have been in skins, but trade in maize, wool and bones was also common. Most of the respondents who remembered this trade, 54 percent, said that it declined around the time of self-government and independence when the white traders left the area. The remaining respondents were not able to state when it had declined.

The sale of local produce to traders was far less common today than during the colonial period prior to 'independence'. As shown in Table 5.17, trade in local agricultural produce was far

Table 5.16 **Table showing the percentage of respondents who remembered trading various local products with traders. N = 50.**

Goods sold to traders	Respondents (%)
Skins	74
Bones	35
Wool	31
Maize	29
Livestock (excluding cattle)	16
Many articles	12
Tobacco	12
Cattle	8
Crops (excluding maize)	4
Maize husks	4
Beans	4
Bottles	2
Eggs	2
Crafts	0

greater between residents of Shixini than between traders and residents. The most common product sold by residents to traders were crafts. The sale of agricultural produce was far less common. The historical trade in skins seems to have disappeared almost completely, along with the trade in maize, wool and bones. Tobacco was the only agricultural product still traded.

Nearly all respondents, 87 percent, said that when they had something to sell they would like to sell more of their produce to traders. This indicates that there was a potential market in rural areas like Shixini which traders could have capitalised on if they so desired, or if they were encouraged to do so. This was confirmed by the fact that agricultural goods were quite widely circulated amongst residents. Small livestock was the most common product traded but there was also quite significant trade in cattle, tobacco, maize and other crops. Trade in skins and wool was almost non-existent.

Table 5.17 The percentage of respondents selling various local products to residents and traders. N = 50.

Goods sold by respondents	Households selling to traders (%)	Households selling to other residents (%)
Livestock (excluding cattle)	20	78
Crafts	64	61
Cattle	22	57
Tobacco	36	57
Crops (excluding maize)	20	51
Maize	14	45
Skins	6	2
Wool	14	0

5.3.4 Livestock Holdings

Table 5.18 demonstrates that the vast majority of households owned pigs and chickens. These were the cheapest form of livestock. Cattle was the next most common form of livestock found amongst households due to their importance as a form of wealth, in bride payments, for sacrifices to ancestors, for ploughing and as draught animals. Goats were the next most commonly owned livestock and were usually used for slaughter at traditional festivities and ceremonies.

Table 5.19 below shows the number and percentage of cattle, sheep, goat and horse herds that had either increased, decreased or remained constant. Generally, cattle and sheep herds seemed to be decreasing while goat herds were generally increasing.

Thirty of the 38 households who owned cattle, sheep or goats, were not satisfied with the size of their herds. This indicates that the majority of households did not have sufficient livestock for their needs and would continue their efforts to increase the size of their herds. One respondent, the wife of the household head, did not know if they were satisfied. Of the eight livestock owners who were satisfied with the size of their herds, five had large herds or cattle, sheep and/or goats ranging in size from 20 to 107. The other three respondents did not have large livestock holdings. It was apparent that one of these respondents, who was the female head of

Table 5.18 Household livestock holdings. N = 50.

Livestock	Households (%)	Median number of animals owned	Range in no. of livestock owned
Pigs	98	2	1 - 10
Chickens	90	7	1 - 20
Cattle	74	5	1 - 49
Goats	44	6	2 - 59
Horses	18	1	1 - 5
Sheep	16	8	1 - 25

Table 5.19 Changing trends in household livestock holdings. Households who owned livestock but were not asked this question are enumerated in the last column.

Livestock	Households with livestock	Increase	Constant	Decrease	Not quest
Cattle	36	11 (31%)	6 (17%)	19 (53%)	2
Goats	24	9 (36%)	4 (17%)	8 (33%)	3
Sheep	7	1 (14%)	2 (29%)	4 (57%)	0
Horses	5	2	0	1	2

the household, was satisfied with her herd because she thought they would be stolen if they increased in number. Another respondent was a very elderly man who lived with his wife, was supported by pensions, and probably had no need for large livestock holdings. Only one livestock owner, who had five goats, had no obvious reason for being satisfied.

Access to grazing did not seem to be a general problem. The majority of livestock owners, 78 percent, said they had access to enough grazing for their livestock. Twenty two percent did not have enough grazing. No common factors appeared to explain this perceived lack of grazing. The quality of the grazing was also not a general problem. As indicated in Table 5.20 the majority of stock owners said the grazing was either excellent, good or satisfactory. Those who said it was poor identified drought, dry winters, the spread of bush and variations in the grass quality between the ridges and valleys as the causes. One respondent also complained that the

grass gave the cattle diseases. However, it was evident that most respondents were talking about short term trends as 81 percent said that the grass had improved since the summer rains began. Grazing seems therefore to be good in summer but bad in winter. There was also no evidence that residents used different grazing areas in winter and summer.

Table 5.20 Local perceptions of grassveld quality. N = 37.

Quality of grass	Stock owners (%)
Excellent	51
Good	22
Satisfactory	8
Poor	19

5.3.5 Cultivation Practices

Ninety percent of respondents had a garden in front of their homestead. No households had more than one garden. Of the five respondents who did not have a garden, two were new homesteads that had not yet established a garden, and three did not have fences around their gardens. Fencing was crucial around gardens as livestock were enclosed at the homestead over night and therefore spent much time around the gardens. All those who had a garden said that they used it every year. However, there were five households who had not used their garden this year. Two of these didn't cultivate due to drought and hard soils, another household didn't cultivate due to a damaged fence although they had cultivated the garden last year. The fifth respondent could not cultivate her garden due to illness, she was the female head of the household.

The average size of gardens, according to estimated measurements in the field was 0.4395 hectares. However, Figure 5.5 shows that the size of gardens varied enormously. The standard deviation of the sample was 0.9667 hectares. The majority of households had relatively small gardens.

A large proportion of the households, 76 percent, had access to fields. However, only 35 percent of these households actually cultivated their fields. In other words, only 26 percent of all respondents cultivated fields every year. There were nine stated reasons for not using fields. These are listed, in order of priority, in Table 5.21 below. The most common reason was that fields were unproductive or too old and dry. This was closely followed by drought and a lack of

resources. The length of time for which fields had remained unused also varied (see Table 5.22). Significantly, 52% of field owners had not used their fields for 10 or more years.

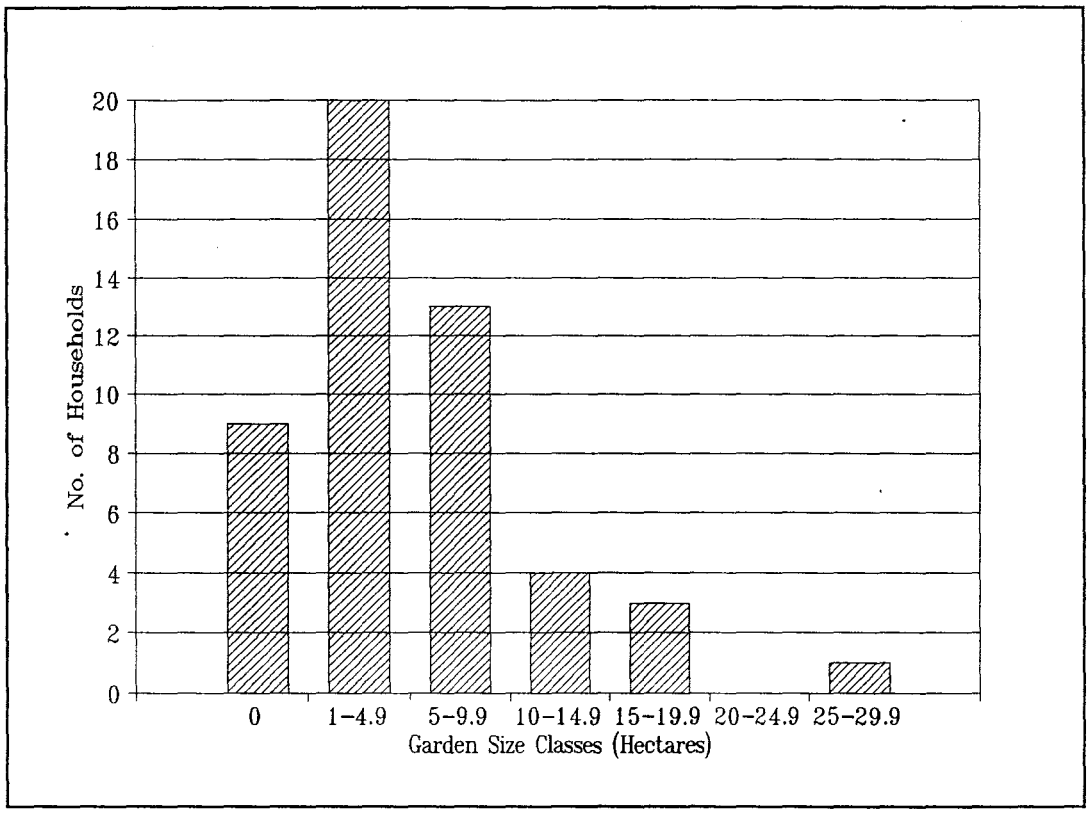

Figure 5.5 ***The number of households in each garden size class. N = 50.***

The reasons for not having a field were not so clear. Seventeen households did not have a field of their own. Of these, five had not applied for one and gave no reason. Another five did not want a field either because fields were unproductive, livestock damaged crops, they had no labour to work fields or they did not like or want the available fields. Two respondents had lost their fields due to the encroachment of residential land. One could not get a field and three respondents had applied and were waiting to be allocated a field.

These results are not conclusive but indicate that there was still a demand for fields. However, the demand and actual use of fields was limited by socio-economic and environmental constraints.

Field size was not measured but McMillans' (1989) study showed that the average size of fields was 1,575 hectares. However, the size of fields varied from 0,2 to 4 hectares. Once the average

area of fields was added to the size of gardens it was evident that there were even greater inequalities in the area of land cultivated by the sampled households (see Figure 5.6).

Table 5.21 **Reasons for not using field. The number of field owners who did not use their fields was 25. Four respondents gave two reasons for not using their fields. N = 27.**

Reasons for not using a field	% (& no.) of field owners
Maize doesn't grow well/poor soils/old field	28 (7)
Drought	24 (6)
Did not have resources to cultivate field	16 (4)
New household not yet able to cultivate field	12 (3)
Damage to crops by animals	12 (3)
Fields were too far away	8 (2)
Erosion	4 (1)
Government told us not to cultivate fields	4 (1)

Table 5.22 **Period when household field was last cultivated. N = 29.**

Period when field was last used	% Households (No)
Last year	17 (5)
A few years ago	31 (9)
Approximately ten years ago	14 (4)
More than ten years ago	4 (1)
Twenty years ago (or more)	17 (5)
A long time ago	10 (3)
Never or not yet	7 (2)

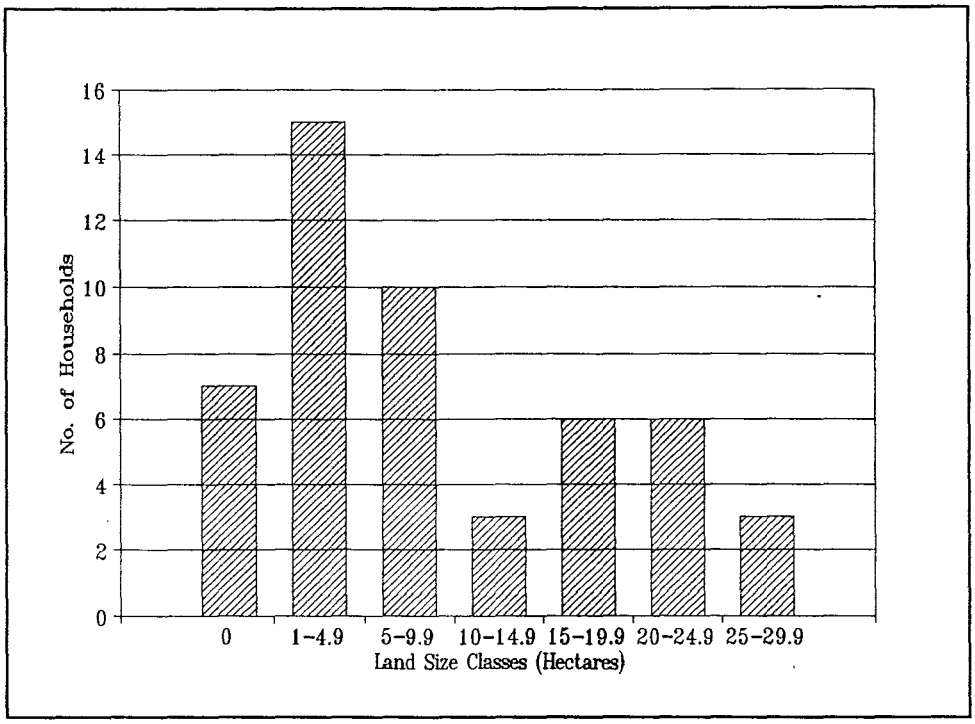

Figure 5.6 ***The number of households in each land size class. N = 50.***

Table 5.23 shows that a far greater variety of crops were grown in gardens than in fields. Inter-cropping was the method of cultivation practised in gardens while mono-cropping was practised in fields. However, the dominant crop in both fields and gardens was maize.

Figure 5.7 shows the planting trends in gardens and fields. Gardens were planted over a far longer period than fields. The peak in garden planting also occurred earlier than that of fields and tended to drop off dramatically as field planting reaches its peak. This was probably due to the fact that planting and ploughing involve a great many people besides household members. This was especially true when work parties and ploughing companies were used or labour was hired to help with the work.

The cultivation practices of the sampled residents were typical of the poor cultivation practices of subsistence farmers in Africa. The dominant method of turning the soil was through the use of a cattle plough. Most garden cultivators, 78 percent, ploughed their gardens during the 1990/1 planting season, but 17 percent hoed their garden, 2 percent used a planter and another 2 percent did not turn the soil. Of those who ploughed, the majority, 53 percent ploughed once, 38 percent twice and 9 percent three times. The methods of ploughing also varied. The

majority, 69 percent, ploughed themselves, 28 percent used a ploughing company and 3 percent hired a tractor to plough their garden. Of those who ploughed themselves many borrowed draught oxen and ploughs from neighbours or family. Of the 13 respondents who cultivated fields, 11 ploughed their fields and the other two used a planter to turn the soil. Of those that ploughed, six ploughed once and five ploughed twice. In addition, the majority, six, ploughed themselves, three hired a tractor and two used a ploughing company. This evidence suggests that less effort was invested in the ploughing of fields than gardens and that those who hired tractors tended to use them on their fields rather than on their gardens.

Table 5.23 **The percentage of garden and field cultivators planting a variety of crops in their garden and or field. The number of garden cultivators was 45 and the number of field cultivators 13.**

Crops	Gardens	Fields
Maize	100%	100%
Pumpkins	68%	8%
Beans	61%	23%
Cabbage	20%	
Sweet Potato	15%	
Potatoes	12%	
Tobacco	8%	
Spinach	7%	
Tomatoes	5%	
Onions	2%	
Carrots	2%	
Calabash	2%	
Melon	2%	8%

As is illustrated in Table 5.24, the number of times that households weeded their gardens and fields during the 1990/91 growing season varied. However, both gardens and fields were most commonly weeded twice. Weeding was largely undertaken by the women of the household. Household labour was also supplemented by hired labour or weeding parties (see Table 5.25).

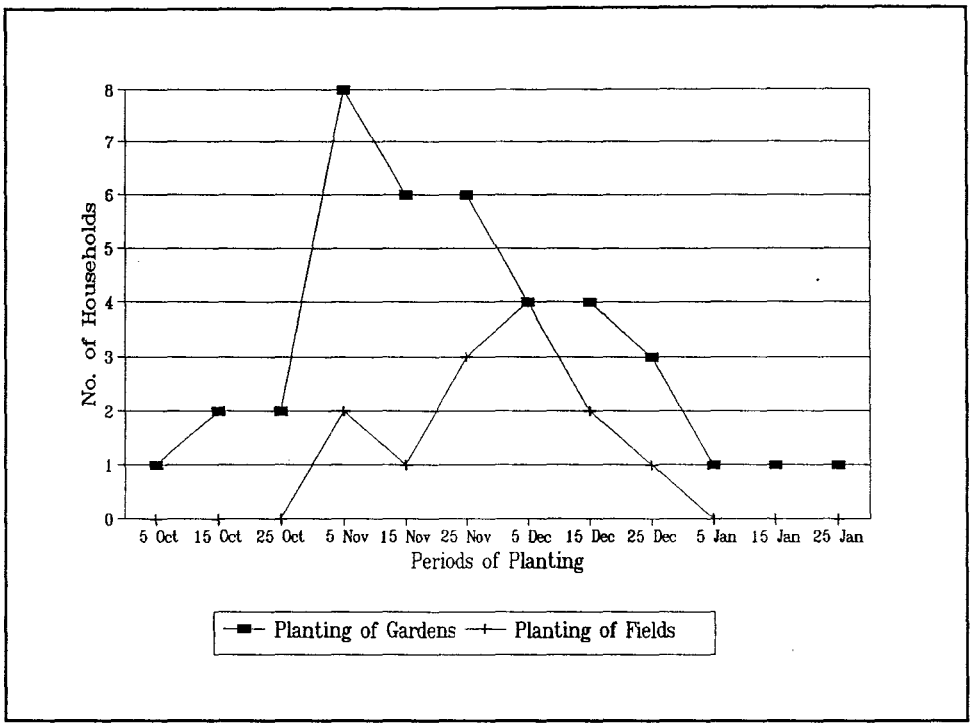

Figure 5.7 ***The number of households planting gardens and fields at different times during the planting season. The number of garden and field cultivators was 45 and 13 respectively.***

Weeding parties were used less frequently than other methods probably because they were expensive. The host of a weeding party was expected to provide the workers with beer and food. According to Heron (1990) weeding parties were also a risky investment. If it rained on the day for which the party was planned then the beer was wasted as the locally brewed beer did not keep very long. On the other hand, wages for hired labour were very low and were sometimes paid in sugar or meat. The households who hired such labour could also exercise more control over the number of people hired, which was not the case with a work party.

Cultivators were used as a method of weeding or assisting with weeding. Seventy seven percent of field cultivators, 10 in number, used cultivators while only 39 percent of garden cultivators used them. This data indicates that much more effort was invested in the weeding of gardens than fields. Cultivators tended to be used as a labour saving device in fields.

Although 74 percent of households said that they purchased fertilisers, only 48 percent of garden cultivators and 46 percent of field cultivators used fertilizers during the 1990/91 growing season (see Table 5.26). The amount of fertiliser used by households was also limited. Only 23 percent of field cultivators used fertilizers on their own. A further 23 percent of field

cultivators, and all the above mentioned garden cultivators, used a mixture of manure and fertilizer.

Table 5.24 **Frequency of garden and field weeding. The number of garden cultivators was 45 and the number of field cultivators 13.**

Frequency of weeding	Garden cultivators (%)	Field cultivators (No)
Never	0	2
1	22	4
2	37	6
3	29	0
4	2	1
5	2	0
8	2	0
Constantly	5	0

Table 5.25 **The percentage and number of garden and field cultivators who used various methods of weeding during the 1990/91 growing season. The number of garden cultivators was 45 and the number of field cultivators 13.**

Weeding Method	% and (no.) of Garden Cultivators	% and (no.) of Field Cultivators
Weed themselves	64 (31)	46 (5)
Hire labour	20 (10)	36 (4)
Use a weeding party	16 (8)	18 (2)

Table 5.26 **Household use of fertilisers and manure in gardens and fields. There were 45 garden and 13 field cultivators.**

Additives	% Garden cultivators	% Field cultivators
Fertilisers only	0	23
Manure only	39	23
A mixture of both	49	23
No additives	12	31

As illustrated in Table 5.27 below, most respondents said they obtained irregular yields from their gardens and fields. This suggests that environmental factors which continually fluctuate i.e. rainfall, had an important effect on yields. However, yields were also influenced by the amount of effort put into cultivation and weeding, the amount of fertilizer or manure used, pests and the quality of the soil and seed.

Most respondents, 51 percent, did not know the reason for these yield trends. Of those who did, most, 32 percent, identified drought and sun as the cause. Only 12 percent and 5 percent identified the failure to use fertilizers/manure and good seed as the reasons. This confirms the suggestion above that fluctuating rainfall was the most important reason for irregular yields.

McMillan (1989) listed a number of factors identified by Shixini residents as obstacles or hazards to cultivation. These factors include drought, floods, unseasonal rainfall, pests, wind, poor soils, grass invasion, a lack of labour and resources, damage to crops by livestock and the distance of fields from households. In the 1990/91 questionnaire survey respondents were asked to give an indication of how often each of these factors created a problem for household cultivation - always, seldom, sometimes, seldom or never. The responses of garden and field cultivators are summarised separately in Tables 5.28 and 5.29 below. Unfortunately, respondents were not asked to rank these problems against one another so it was only possible to state how common these problems were. It was not possible to identify the most restrictive problems.

Drought was found to be an extremely common problem. Of those respondents who cultivated a garden, 90 percent perceived drought as a problem. Just over half of these, 49 percent, said drought was sometimes a problem while 41 percent said it was always a problem. Ninety two

Table 5.27 **The percentage of garden and field cultivators whose yields were decreasing, increasing, remaining constant or were irregular. The number of garden cultivators was 45 and the number of field cultivators 13.**

Yield trends	% Garden Cultivators	% Field Cultivators (No.)
Decreasing	27	31 (4)
Constant	5	0
Increasing	10	15 (2)
Irregular	59	54 (7)

percent of field cultivators also perceived drought as a problem, with 31 percent experiencing drought sometimes and 61 percent experiencing it always. Floods, on the other hand were not perceived to be much of a problem. Only 39 percent of garden cultivators and 31 percent of field cultivators identified floods as a problem at times.

Unseasonal rain was also identified as a problem but much less so than drought. Seventy three percent of garden cultivators identified unseasonal rain as a problem. Of these, 32 percent said it was sometimes a problem while 34 percent said it was always a problem. Only 62 percent of field cultivators identified this as a problem with 23 percent experiencing it sometimes and 39 percent always (or often).

Pests were identified as a problem by both garden and field cultivators but more so by garden cultivators. Eighty three percent of garden cultivators always (or often) had a problem with pests while another seven percent sometimes had a problem with pests. Eighty five percent of field cultivators identified pests as a problem. Seventy percent of these always or often had this problem while 15 percent sometimes had a problem.

Shixini location is located along South Africa's south eastern coast and experiences frequent and sometimes strong winds. As such one would expect wind to present a hazard to cultivation, especially maize. The survey of residents showed that wind was a hazard to the cultivation of gardens more often than for the cultivation of fields. This was not surprising given that most gardens were located on the exposed ridges while the fields were in the more sheltered river

Table 5.28 **The frequency of occurrence of a variety of agriculturally inhibiting environmental and socio-economic problems experienced by garden cultivators. The number of garden cultivators was 41.**

Problem	Never	Seldom	Some-times	Often	Always
Drought	(4) 9.8%		(20) 48.8%		(17) 41.4%
Floods	(22) 53.7%	(3) 7.3%	(13) 31.7%		(3) 7.3%
Unseasonal rains	(10) 24%	(1) 2.4%	(13) 31.7%	(3) 7.3%	(14) 32%
Pests	(4) 9.8%		(3) 7.3%	(1) 2.4%	(33) 80.5%
Wind	(7) 17.1%		(19) 46.3%	(4) 9.8%	(11) 26.8%
Poor soil	(19) 46.3%		(11) 26.8%	(1) 2.4%	(10) 24%
Grass invasion	(10) 24%		(3) 7.3%	(2) 9%	(26) 63.4%
Lack of labour	(19) 46.3%		(3) 7.3%	(1) 2.4%	(18) 43.9%
Lack of resources	(13) 31.7%		(6) 16%	(2) 9%	(20) 48.8%
Crop damage by animals	(1) 2.4%		(12) 29.3%		(28) 68.3%

Note: The actual number of households is indicated in brackets.

Table 5.29 **The frequency of occurrence of various agriculturally inhibiting environmental and socio-economic problems amongst the 13 field cultivators.**

Problems	Never	Seldom	Some-times	Often	Always
Drought	(1)		(4)		(8)
	8%		31%		61%
Floods	(9)		(4)		
	69%		31%		
Unseasonal rain	(5)		(3)	(1)	(4)
	38%		23%	8%	31%
Pests	(2)		(2)	(1)	(8)
	15%		15%	8%	62%
Wind	(4)		(2)	(2)	(5)
	31%		15%	15%	38%
Poor soil	(7)		(2)		(4)
	54%		15%		31%
Grass invasion	(1)		(1)	(1)	(10)
	8%		8%	8%	76%
Lack of labour	(2)		(1)		(10)
	15%		8%		77%
Lack of resources	(3)				(10)
	23%				77%
Damage by animals	(2)		(1)		(10)
	15%		8%		77%
Distance from homes	(4)				(8)
	31%				62%

Note: The actual number of households is indicated in brackets.

valleys. However, contrary to expectations, wind seemed to be a more common hazard amongst respondents from the northern sub-wards such as Khamisa, Vulani, Ngwevu, Kwitshi and Fumbatha.

Local perceptions suggest that poor soils were a problem but not the most common problem. Only 53 percent of garden cultivators and 46 percent of field cultivators identified poor soils as a problem. There are three possible reasons for this:

1) poor soils were not a big problem.
2) most respondents were unaware of the importance of soil quality.
3) the question was asked incorrectly or was unclear.

Given that the use of fertilizers and manure was common amongst the respondents and that many owners of unused fields complained that their fields were unproductive or too old and dry, it is safe to assume that most respondent's were aware of the importance of soil quality but describe the problem in a different manner i.e "too old and dry" or "poor harvests". It is possible then that these figures underestimate the extent of the problem due to problems with the phrasing of the question, local perceptions and the difficulties of isolating the influence of individual factors.

Grass invasion was perceived to be a greater problem amongst field cultivators than garden cultivators. While 92 percent of field cultivators identified grass invasion as a problem, only 75 percent of garden cultivators identified it as a problem. These perceptions can be expected as gardens were weeded much more thoroughly and regularly than fields. In addition, poor cultivation methods such as no winter ploughing, shallow ploughing and minimal ploughing encourage grass invasion in fields.

Given that large numbers of young men migrate to urban areas to find work, many South African theorists have suggested that this would have a negative effect on cultivation in the rural areas. Local perceptions of this problem support this theory but indicate that other problems were more common. This is not surprising given that women do the bulk of the agricultural work. It was also evident that labour shortages were more common amongst field cultivators, 85 percent, than amongst garden cultivators, 53 percent. There are a number of reasons for this difference. Fields tended to be much larger and further away from homesteads and thus required a greater labour input than gardens. Labour saving devices such as ploughs, planters and cultivators, which were operated by men, also tended to be used in fields more often than in gardens. Finally, the weeding effort invested in gardens was much higher than that for fields.

Given that there were such enormous income inequalities within the community one would expect resource shortages to be common. Local perceptions confirmed this hypothesis and showed that resource shortages were also more common than labour shortages. The extent of the resource shortage was alleviated somewhat by borrowing and reciprocal relations. It was also evident that resource shortages were only slightly more common amongst field than garden cultivators. Sixty eight percent of garden cultivators and 77 percent of field cultivators identified resource shortages as a problem. However, resource shortages did seem to be more of a consistent problem amongst field cultivators. The reason for this difference was probably the heavier use of ploughs, planters and cultivators in fields.

Damage to crops by livestock was the most commonly identified problem. This was identified as a problem by 97 percent of garden cultivators and 85 percent of field cultivators. The fact that garden cultivators identified this as a more common problem than field cultivators can be expected due to the fact that livestock spend more time around the gardens than fields, and tend to be watched more carefully when they were in the vicinity of fields.

Sixty two percent of all field cultivators identified the distance of fields from homesteads as a problem. Fields could be up to four kilometres from homesteads and tended to have very poor access routes. This made it nearly impossible for most respondents to hire tractors to plough their fields. Carting produce, manure, seed, fertilizer and equipment to and from these fields was difficult and the distance added many hours to the necessary labour input.

Respondents were also asked if they remembered a time when Shixini residents cultivated very small gardens, or none at all, and relied mainly on fields. Just over half of the respondents, 57 percent, remembered such a time. Half of those who remembered said that this was the practice 40 or more years ago. Thirty one percent remembered it 30 years ago and 12 percent remembered it 20 to 30 years ago. Only eight percent could not identify the period.

There were a number of reasons given for this change in land use practices. These are listed in the Table 5.30 below. Thirty percent of those who remembered did not know the reason for the changes. The most common stated reason, 29 percent, for the changes was that large gardens replaced fields. Another 19 percent said that fields were no longer productive. It is possible that this second reason was the reason why people began to replace fields with large gardens.

When asked if they recalled any attempts to encourage or force them to change their agricultural practices, the majority of respondents, 94 percent, were not aware of any such efforts prior to the introduction of Betterment.

Table 5.30 **The percentage of respondents who remembered different cultivation practices in the past and gave various reasons for the move away from such practices.**

Reasons for changes in land-use	% of respondents
Do not know the reason	30
Large gardens replace fields	29
Fields do not yield any more	19
Damage to crops by livestock	10
People not healthy enough to cultivate fields	3
Garden size increases as variety of crops grown increases	3
Asked chief for bigger gardens	3
Chief told them not to plant fields	3

In an attempt to obtain some idea of the future of small-holder farming in Shixini, respondents were asked if they thought their young children would become small-holder farmers like themselves. Most respondents, 56 percent, were not sure or did not believe that their children would want to be small-holder farmers like themselves when they grew up. The main reasons for this was that the children would be educated and/or urbanised. The next most common reason was that the children took no interest in farming and/or were lazy. Only 44 percent were confident that their children would become small-holder farmers. The most common reasons given for this was that the children were learning how to farm now and would follow their parents' example. These perceptions indicate that over half of the youngsters living in Shixini may leave the area, either temporarily or permanently when they grow up. However, a significant proportion may remain and continue the tradition of small-holder subsistence farming.

5.3.7 The influence of household size, structure and wealth on agricultural practices

The descriptive data discussed above indicates that, according to local perceptions, environmental constraints and a lack of resources, are the major factors influencing local agricultural practices and agrarian change. However, a lack of resources did not seem to be as important a constraint to respondents as the historical evidence had suggested it would be. The discussion which follows examines the influence of household characteristics such as size,

structure, income and livestock on agricultural practices in an attempt to assess the importance of a lack of resources.

To begin with, the data was tested to see if there were any relationships between the size of land holdings and the following individual household characteristics:

a) number of adults
b) number of consumers
c) number of cattle
d) the income index
e) the wealth index (combines cattle and income)

Cultivation in Shixini relied very heavily on household labour which was drawn mainly from the adult members of the household. The number of able-bodied adults would, therefore have had a direct influence on the household's ability to cultivate. The number of consumers in the household would determine it's need to produce food for consumption. Cattle, or more precisely, draught oxen, played a very important part in cultivation. As such the number of cattle owned by a household would influence the households ability to cultivate. Finally, the households' income would determine it's ability to hire labour, brew beer for work parties or ploughing companies, hire tractors and purchase fertiliser or seed. The estimate of the area of land cultivated combined the average size of fields, 1,575 hectares, with garden size.

Household cattle numbers seemed to be the only factor which had a clear influence on the area of land cultivated (see Figure 5.8). As is evident in Figures A1 to A5, no relationships were found between the area of land cultivated and any of the other household characteristics individually. The CPI1 for each household was then calculated to determine the combined influence of the remaining household characteristics. The CPI1s for each household were then plotted against the area of land cultivated (see Figure 5.9). As is evident from Figure 5.9, the relationship between CPI1 and the area of land cultivated was very weak thus indicating that livestock holdings had a much stronger influence on household cultivation practices than any other combination of household characteristics.

A second CPI was then calculated to add livestock holdings to CPI1 and derive a composite measure of a household's cultivation probability. Once the CPI2 for each household had been calculated the indices were plotted against the area of land cultivated (see Figure 5.10). Figure 5.10 shows that there was a relatively clear relationship between a household's CPI2 and the area of land it cultivated. The median figures for different types of cultivators confirms this evidence. The sample was divided into three groups:

1) those who cultivated no land,

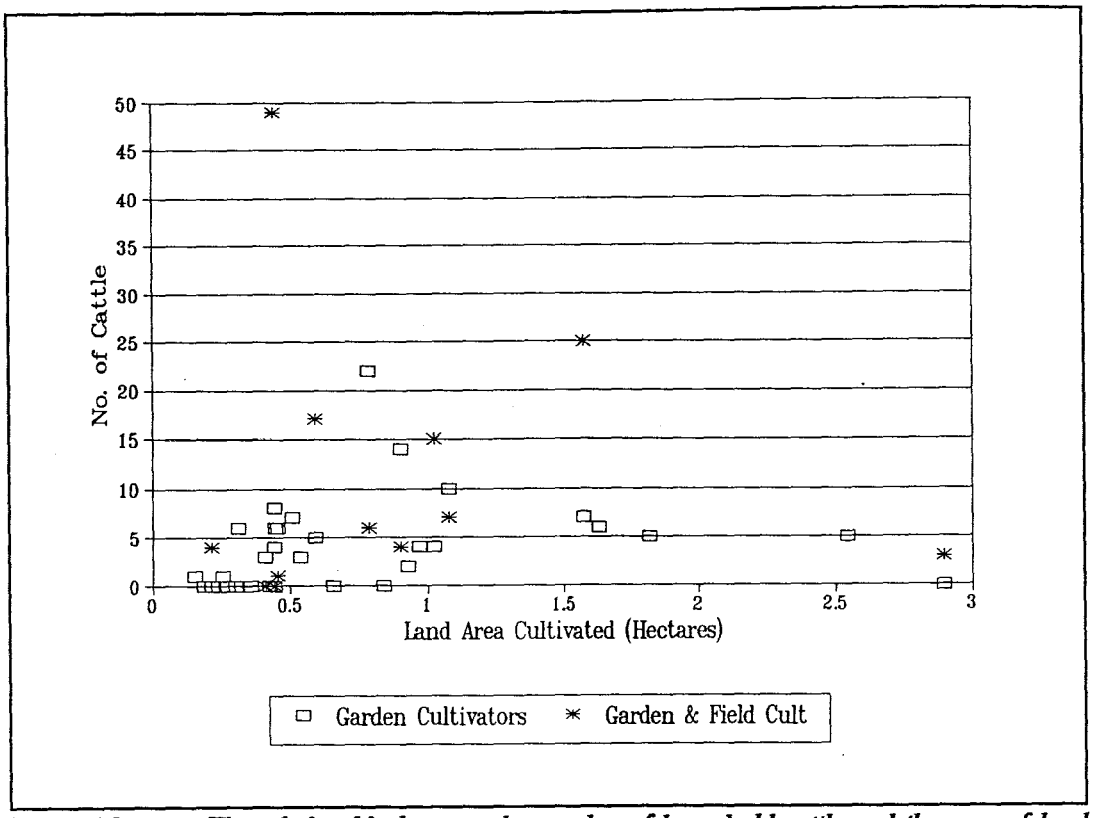

Figure 5.8 ***The relationship between the number of household cattle and the area of land cultivated. N = 45.***

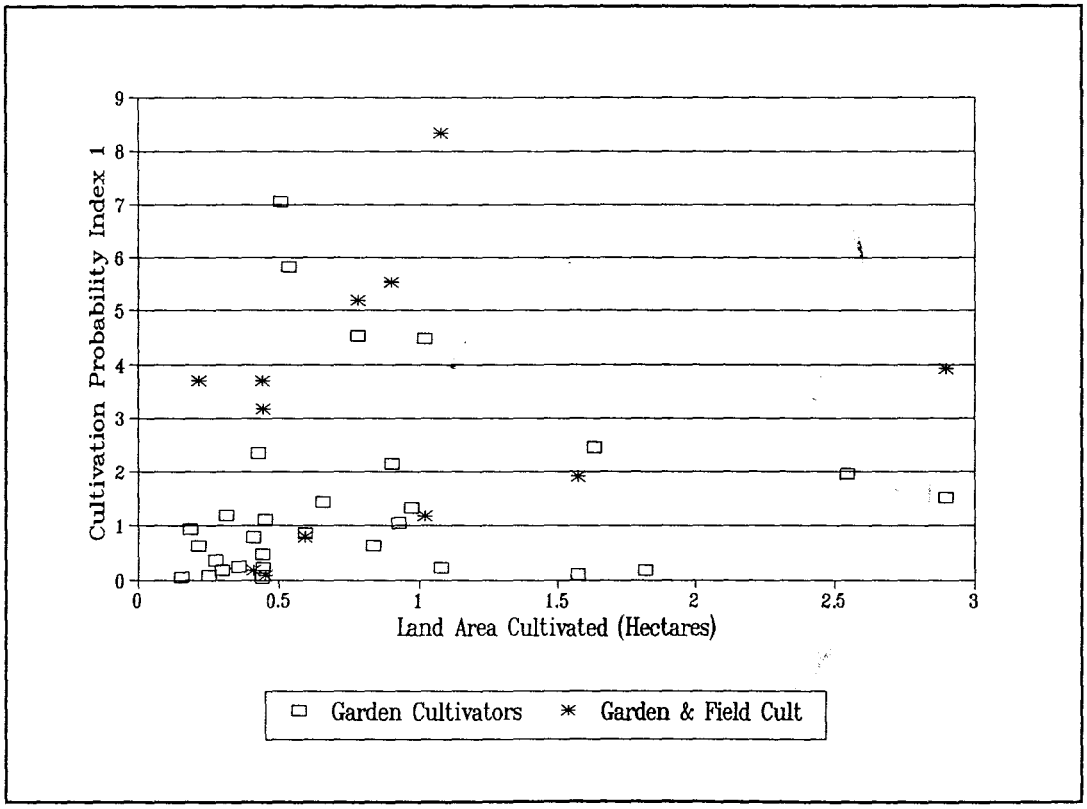

Figure 5.9 ***Relationship between the Cultivation Probablity Indices 1 and the area of land cultivated. N = 45.***

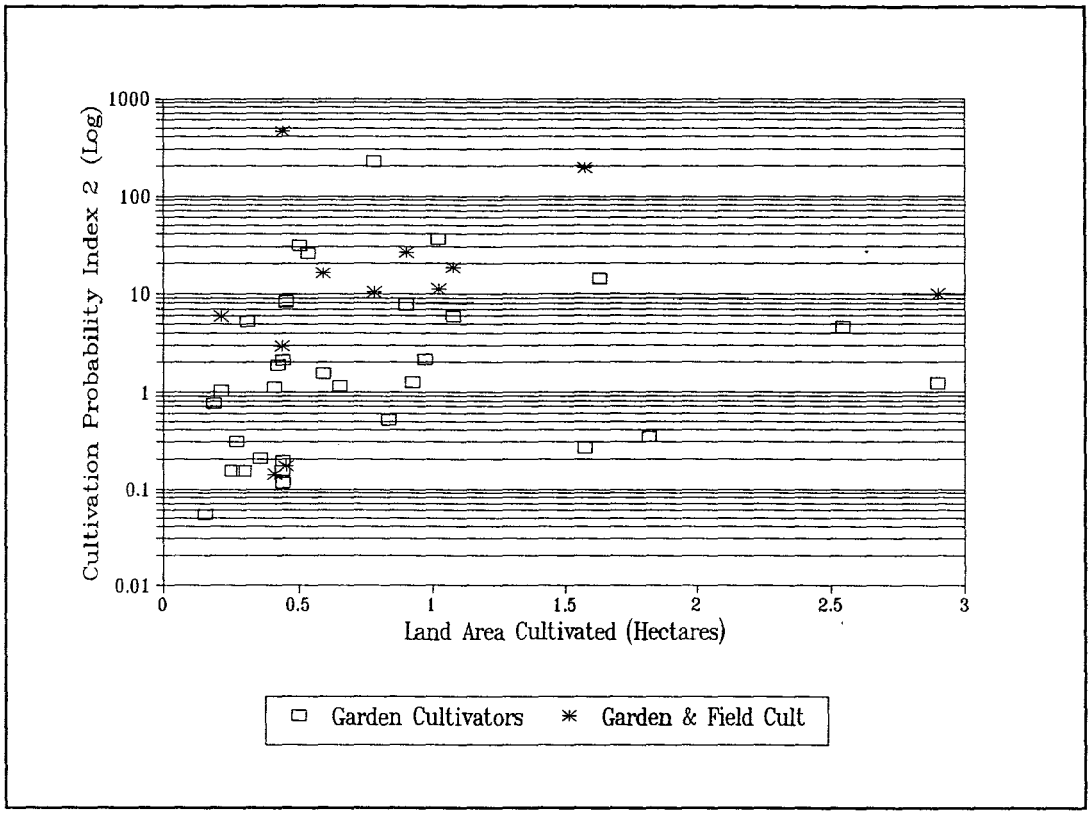

Figure 5.10 ***Relationship between Cultivation Probability Indices 2 and the area of land cultivated. N = 45.***

2) those who cultivated gardens only, and

3) those who cultivated gardens and fields.

The median and mean CPI2s for each group were then calculated. Clear differences became apparent. The median figures are probably more representative as they are less sensitive to outliers. Table 5.31 shows that the median CPI2 was lower amongst those households that cultivated gardens only than the median for garden and field cultivators. Those who did not cultivate had the lowest median CPI2. This data shows that household characteristics like the number of adults, consumers, livestock and income had a strong influence on the size of gardens.

Households were then categorised into one of eight CPI2 size classes and the frequency of households in each size class plotted on a bar graph (see Figure 5.11). This graph revealed very significant differences in the likelihood of cultivation. Most households lay in the lowest two categories but there were a few households with very high indices. Although some of the households with very high indices cultivated a garden and field there were a number of

households in this category who cultivated average size gardens only. It was also evident that some households with very low indices cultivated a large garden or a garden and field.

Table 5.31 The mean and median CPI2 and garden size for non-cultivators, garden cultivators and garden and field cultivators.

Land cultivated	Cultivation Index		Garden Size	
	Mean	Median	Mean	Median
No land cultivated	3.14	0.58	0	0
Garden only	3.01	1.15	7848.3	5053.7
Garden and Field	8.58	7.39	6252.9	5154.7

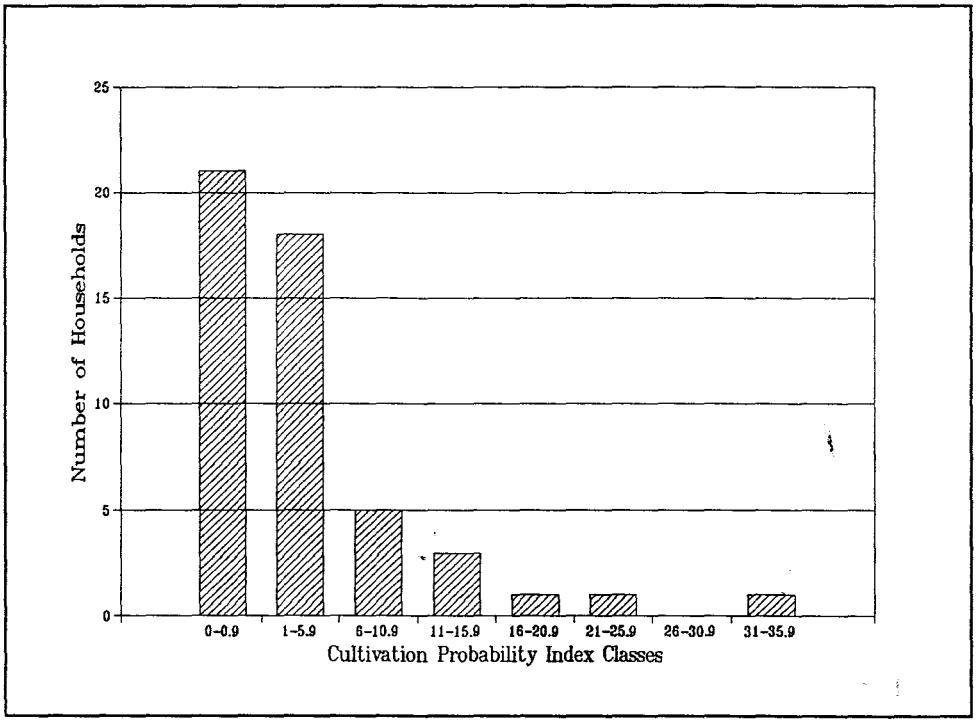

Figure 5.11 ***The number of households in each Cultivation Probability Index size class. N = 50.***

However, as is evident in Figures 5.9 and 5.10 there were a number of households whose cultivation practices did not relate directly to household characteristics and resources. Unproductive land, drought, pests, damage to crops by livestock and access to land amongst others, had an important inhibiting influence on household cultivation practices. These social

and environmental constraints were identified by respondents as common difficulties. The CPIs were not able to take these factors into account and thus could not give an accurate indication of a households ability to cultivate.

Another problem was the data. The areas of individual households' fields were not measured. The area of fields was therefore assumed to be 1,575 hectares which was the average size of fields as measured by McMillan (1989). However, it was also evident from McMillan's data that field size varied considerably. Some households had approximately 0.2 hectares while others had more than 4 hectares. So, this average field measure disguised quite large differences in the size of fields. In addition the fenced area of gardens was not an accurate measure of the area of the garden actually cultivated. Many households cultivated only a portion of their garden. Thirdly, the yield from gardens was greater than that from fields. McMillan (1989) estimated that garden yields were on average 3.76 bags of maize while average yields in fields were only 3.01 bags, despite the fact that fields tend to be larger. This was probably due to the fact that gardens were worked more intensively than fields and had higher levels of fertility than fields. These different productivity rates made it problematic to equate the value of a garden and field, per unit area, to a household. In conclusion then it is evident that although the area of garden or land cultivated was in many ways an inaccurate estimate of a household's actual cultivation effort, it is possible to see a relationship between the cultivation probability index and actual cultivation practices.

A cultivation effort index (CEI) was then computed by weighing the following factors against one another:

1) area of land cultivated
2) the number of times the garden and/or field was ploughed and the means by which it was ploughed,
3) the number of times the garden and/or field was weeded and the means by which it was weeded.

As indicated in Figures A.6 - A.9 (see Appendix 5), no linear relationship was found between the amount of labour effort invested in cultivation and three individual household characteristics:

1) the number of adults,
2) the number of consumers
3) the income index and
4) the wealth index.

5.4 Discussion

This section attempts to assess the validity of the survey results, their applicability to areas other than Shixini and the contribution the survey makes to the overall study. The extent to which it enhances our understanding of the local response to changing physical, social and economic conditions will also be assessed. However, the discussion begins with a summary and assessment of the results. There are three components of this discussion. Firstly, the socio-economic structure of the community. Secondly, current agricultural practices and perceptions of constraints and thirdly the relationships between household characteristics and agricultural practices.

5.4.1 Socio-economic structure of the community

The results of the questionnaire survey indicated that the Shixini population was highly stratified and unequal. The majority of the population were very poor having little income and few livestock, while a small minority were very wealthy. The wealthiest households were those who had the widest variety of income sources or had household members who were locally employed or employed as civil servants elsewhere in Transkei. It was also clear that a household's resources, wealth and status fluctuated over time as it's structure changed. Thus larger households tended to have higher income and wealth indices than smaller households. Other studies have shown that poverty and inequalities were a typical feature of Transkeian rural areas. Moll (1984) found similar trends in lower Roza. The income distribution of lower Roza, Qumbu district displayed very similar characteristics to Shixini's income and wealth distributions. In addition, Osmond *et al.* (1983) found that the top 20 percent of households earned 60 percent of the total income earned while the poorest 50 percent of households earned approximately 11 percent of all income.

The survey results also showed that the majority of households, 74 percent, depended very heavily on remittances from migrants, most of whom worked on South African mines. In addition, 46 percent of households depended very heavily on pensions. Once again Osmond *et al.* (1983) had similar findings; they found that over half of Transkeian households earned less than R1000 per annum in 1983 and relied on migrant remittances for approximately 72 percent of their total income. According to Moll (1984), the average male migrant from Roza sent home R504 per annum in approximately six payments during 1983. Female migrants remitted on average R446 per annum. Occasional local employment was another common source of income but this rarely provided a significant proportion of income. Moll's (1984) study of lower Roza in the Qumbu district of Transkei showed that such workers earned a median income of around

R1.20 per day or R34 per month. The selling of agricultural produce contributed very little if anything to household income in Shixini and most of Transkei's rural areas. Osmond *et al.* (1983) found that household production contributed less than four percent of total income. These findings were not surprising given the decline in agricultural trade during the first half of the twentieth century.

A large proportion of household income in Shixini was spent on basic foods such as maize meal and samp. The vast majority of households also depended heavily on outside sources of income to survive. Osmond *et al.* (1983) show that this was a typical feature of rural Transkei. They found that rural households spent 43.4 percent of their income on food and that 30 percent of this was spent on grain products. The Shixini survey also showed that the dependence on external sources of income for basic food requirements had increased over time due to declining agricultural production. However, the majority of households continued to invest in agricultural inputs and livestock. Subsistence agriculture remained, therefore, an important aspect of the rural economy in Shixini.

This evidence indicates that Shixini was a typical underdeveloped and peripheral area within the South African space economy. Abject poverty and enormous inequalities were particularly striking features of this area. These conditions would lead one to expect that the poor majority of the rural population would have a great need for locally produced foods but very limited means with which to cultivate. It is not surprising therefore, that agricultural activities failed to supply even basic subsistence food requirements for the vast majority of the population. Thus the rural population relied very heavily on external sources of income to meet their subsistence needs and financial obligations.

5.4.2 The agricultural practices of the community

As already mentioned, cattle, goat and sheep holdings were found to be very unequal. In all livestock categories the median number of stock units per household was very low. While over half the sampled households had less than four head of cattle, three households had more than 20 head. The largest of these herds numbered 49 cattle. Goat holdings were even more unequal. Just over half the sampled households had no goats while five households had more than 20 goats. The largest of these goat herds numbered 55. Such inequalities indicate that goats were not the poor man's substitute for cattle. On the contrary, the wealthy goat owners would have had a large market for their goats as goats were often used in traditional sacrifices instead of the more expensive cattle. Only ten percent of households owned sheep and of these, one household owned just under half the total number. Livestock holdings were,

therefore, not only low but very unequal. McMillan's (1989) study produced similar results (see Table 5.32). These findings were consistent with trends evident in the historical data. The survey findings certainly indicated that the majority of stock holdings were very small during 1990. Inequalities in stock holdings were also significant. Local perceptions of trends in herd sizes also matched trends evident in official records.

Table 5.32 McMillan's (1989) data on household livestock holdings.

Type of livestock	% Household	Mean per Household
Oxen	51	3.4
Bulls	34	2.4
Cows	60	3.3
Sheep	17	11.7
Goats	30	8.5
Horses	19	1.3
Pigs	85	2.6
Fowls	89	8.7
Ducks	9	7.5

Source: McMillan (1989)

Cooper's (1980) examination of cattle herd characteristics in Botswana showed that a herd of ten cattle was barely enough for ploughing and was certainly not sufficient to allow a farmer to sell off any cattle if he wished to maintain the herd in the long term. It was only when the herd increased to between 15 and 20 head that the possibilities of the long term reproduction of the herd began to improve. Households with between 21 and 40 head of cattle could guarantee enough oxen for a full ploughing team and could easily afford to sell off cattle when necessary. Households with more than 40 head of cattle were considered rich and self-sufficient. If these characteristics are comparable to Shixini, then only six percent of households may have had enough cattle for a full team of oxen for ploughing and could comfortably sell off stock. Another eight percent probably had just enough cattle to plough while 60 percent of respondents did not have sufficient cattle to plough and were forced to co-operate with other households. Twenty six percent of households had no cattle. This evidence indicates that 86 percent of Shixini households did not have enough draught oxen to plough fields and gardens and were forced to co-operate with neighbours and kin to till the soil. It was not surprising

therefore, that 77 percent of field cultivators identified a lack of resources as a consistent problem.

Current cultivation practices were also examined in the survey. The vast majority of households, 90 percent, cultivated a garden while only 26 percent cultivated a field. Normally, households who cultivated a field also cultivated a garden. The soil in both gardens and fields was turned either with a plough or hoe. However, ploughing was the most common method used. The ploughing was usually undertaken by individual households but co-operative ploughing through the use of ploughing companies and the hiring of tractors were also used. Given the shortage of draught oxen and ploughs amongst the majority of poor households, one would expect ploughing companies to be used more often. However, the questionnaire survey indicated that only 28 percent of garden cultivators and 15.5 percent of field cultivators used ploughing companies during the 1990/91 planting season. It is possible that the severe lack of resources may also have undermined the ability of a large percentage of households to contribute to such companies. Many households tended to borrow draught oxen, ploughs, planters and cultivators from neighbours and kin to undertake cultivation. This borrowing may have been preferable to participation in ploughing companies as the reciprocal relations associated with borrowing from a neighbour may have been lighter than those of a ploughing company. In addition, low status in a ploughing company also meant that the household had no choice as to when their garden or field would be ploughed and would probably have had to wait until late in the season for their land to be ploughed. This trend differs from Heron's (1991) finding for the Nompa sub-ward of Shixini which showed that 73 percent of Nompa's households belonged to a ploughing company. However, it is possible that some members of a ploughing company, particularly those who did not contribute much to the company and consequently had little status, did not always use the company to plough their garden and/or field.

The questionnaire survey also confirmed historical evidence of poor cultivation methods. For example ploughing activities were very limited. Just over half of the households ploughed their field and garden once while 38 percent of garden cultivators and 45 percent of field cultivators ploughed twice. According to Heron (1991) and McMillan (1989) winter ploughing was not practised in Shixini. The major reason for this was that the oxen were very weak in late winter and early spring. Ploughing was, therefore, often left until after the first of the spring rains. These poor cultivation methods have contributed to low productivity levels by allowing weeds and grass invasion to undermine yields. Yields were also reduced by weeding practices.

Weeding was the most labour intensive component of cultivation. It was usually done by hand due to the shortage of mechanical cultivators. The use of cultivators was further limited by the

lack of mechanical planters. Cultivators could only be used by households who had used mechanical planters rather than traditional methods of broadcasting seed because cultivators were dragged through the soil between the rows of plants. There were also clear differences between the effort invested in the weeding of gardens and fields. The survey found that cultivators were used far more frequently in fields than in gardens. McMillan's (1989) data confirmed these findings. He found that 18 percent of garden cultivators and 67 percent of field cultivators used cultivators (McMillan, 1989). The questionnaire survey also revealed differences in the number of times that gardens and fields were weeded. Seventy eight percent of garden cultivators and 54 percent of field cultivators weeded more than once. McMillan (1989) found similar trends but lower percentages. Fifty five percent of garden cultivators and 20 percent of field cultivators weeded more than once (McMillan, 1989). While most of the garden weeding was undertaken by individual households, work parties and hired labour supplemented household labour. However, field cultivators made much more use of hired labour and work parties. This dependence on cultivators, work parties and hired labour for field cultivation suggested that labour shortages were far more common in field cultivation than garden cultivation. This was not surprising given that the necessary labour input for field cultivation was greater due to the distance of fields from homesteads and the larger size of fields.

Maize was the main, and often the only crop planted in fields while a variety of crops were intercropped in gardens. These other crops were largely pumpkins and beans although a variety of other vegetables were grown by a small number of households. However, the main crop in gardens remained maize. This marks a distinct change from traditional intercropping practices in fields during the early part of the century. When the change occurred remains unclear but it may have been associated with the move from field to garden cultivation. The result of the introduction of mono-cropping was a decline of soil fertility in fields as opposed to gardens. Mono-cropping in fields also promoted erosion processes due to the sparse vegetation cover. These practices, together with fencing and more intensive cultivation methods, ensured that garden cultivation was more productive than field cultivation. According to conservative estimates by McMillan (1989), the average maize yield per homestead for gardens was 3.76 bags while that for fields was 3.01 despite the fact that fields were usually much larger than gardens. McMillan (1989) calculated that the average size of gardens was 0.6706 hectares while that of fields was 1,5755 hectares (McMillan, 1989).

The lack of agricultural inputs such as new seed, fertilisers and insecticides also undermined yields. The survey results showed that the use of fertilisers and manure was very limited, particularly in fields. McMillan's (1989) study also showed that 76 percent of households did not use insecticides largely because they did not know how to use them or because they did not

appear to work. He also found that only 41 percent of his respondents purchased seed from outside sources such as traders, TRACOR and the Shixini Development Research Project. Most of those who bought seed used it in conjunction with their own seed (McMillan, 1989).

The survey also provided valuable information on land-use practices. Shixini households had access to two types of arable land, gardens and fields. Gardens were located next to the homestead and formed part of the residential site. As such, all households had rights to a garden. The only households who did not have gardens were those who were new homesteads which had not yet established a garden or households whose garden fence was in disrepair. Ninety percent of households sampled cultivated gardens. Access to fields was not as universal. Sixty eight percent of households owned fields and another eight percent borrowed them. Twenty six percent of households had no access to fields. Of these, 30 percent still wanted fields, 12 percent had lost their fields and the remainder, 52 percent, did not want a field. There were a number of reasons for not wanting fields. Most of these respondents indicated that the available fields were unproductive, and one respondent did not have the resources to cultivate a field. However, McMillan's (1989) results show that 95 percent of his respondents expressed a need for a field in addition to a garden. They believed this would allow then to rely more heavily on agriculture and reduce their expenditure on basic foods (McMillan, 1989). This indicates that the demand for arable land was still high but was undermined by the low soil fertility levels of fields and the difficulty of cultivating them.

It was also evident that many of the households who had access to fields did not use them for similar reasons. Only 35 percent of household who had access to fields cultivated them. The most common reason for not using them was that fields were unproductive. Other less common reasons included drought and a lack of resources. In addition, over half of the respondents remembered that field cultivation was common and garden cultivation almost minimal over 30 or 40 years ago. The most common expressed reason for the move towards garden cultivation was that gardens had replaced fields due to the low productivity of fields. This data confirms trends already evident from the historical literature, official reports and the GIS analysis. However, it gives no clear indication of the major causes of declining productivity.

Amongst those who cultivated gardens and/or fields the most common problems (in order of significance) were perceived to be: damage to crops by livestock, pests, drought, wind, grass invasion, unseasonal rains, a lack of technology, a lack of labour, poor soils and flooding. Environmental constraints were equally common amongst garden and field cultivators. Rainfall data for the Gatyana district between 1921 and 1976 supports local perceptions of drought as a consistent problem (Talbot, 1988). Talbot's (1988) analysis of annual rainfall showed that

drought occurred with a frequency of four in every ten years during the 1940s and 1960s. The same frequency of drought in the planting season occurred during the 1940s, 1950s and 1960s and in the growing season during the 1940s, 1960s and 1970s (Talbot, 1988).

However, there were differences between field and garden cultivators when it came to questions of resources. Labour and technology shortages were far more common amongst field cultivators. It was also clear that only a minority of the population had enough income, labour, oxen and equipment to conduct cultivation most of the time. Over half the population lacked the necessary resources to cultivate or had difficulty in getting access to them.

Contrary to expectations, poor soils and soil erosion were not perceived to be as common a problem as other factors. The major reason for this was probably that local residents had a different perception of the problem and may not have understood the question. The expressed reasons for not using fields verify this. Many respondents said they did not use their fields because the maize did not grow well or the field was too old and dry. They perceived what was happening but did not identify the causal factors. This data gives no indication of whether low field productivity was due to low soil fertility, poor cultivation methods, damage to crops by livestock, drought or a combination of these factors. However, the analysis of the relationship between household size, structure and wealth provided some indication of the major causal factors.

5.4.3 The relationships between household characteristics and agricultural practices

The historical evidence discussed in the previous chapters leads one to expect that a household's size, structure, income and cattle holdings would have had a relatively clear influence on cultivation practices. For example a household with many dependants would have had a strong need for cultivation when income was not sufficient to supply all the households needs. On the other hand, a households' ability to cultivate would be determined by the number of able-bodied adults in the household, as well as it's income and access to draught oxen and other equipment. However, the only relationship clearly evident from the data was between the area of land cultivated and the number of cattle owned by each household. Once all the factors were combined, however, it became evident that there was a relationship. The mean CPI2 was highest amongst households cultivating a garden and field and lowest amongst non-cultivators. A positive relationship was also found between the amount of effort invested in cultivation during the 1990/91 growing season and the cultivation index for each household. The survey data indicated therefore, that the original expectations or hypotheses were generally correct. However, there seemed to be a number of exceptions to the general rule. A number of possible

reasons for this were identified. Firstly, a households current size, structure and wealth were not the only factors influencing their ability to cultivate. Participation in long-term reciprocal co-operative structures allowed households to gain assistance from other households in exchange for past or future assistance to those households. Secondly, the area of land, garden and fields, actually cultivated during the 1990/91 season was not accurately measured. The fenced perimeter of gardens was measured but many households did not cultivate their entire garden. In addition, fields were not measured. Despite these difficulties, it is evident, from comparisons with Heron's (1990) study of work parties and ploughing companies in the Nompa sub-ward of Shixini, that household size, structure and wealth had an important influence on its cultivation practices. Heron (1990) found that a households' access to stock was the most significant factor influencing it's ability to cultivate. In addition, the number of consumers in the household exerted a stronger influence on yield than the number of workers in the household. This was because households with higher dependency ratios would work longer hours than households with low ratios due to their greater need (Heron, 1990). Finally, it was also evident that there were enormous differences in the ability of households to cultivate and that the majority had a low CPI2.

5.5 Conclusion

Once again it is necessary to relate these findings back to the original question posed: *What were the socio-economic and environmental processes influencing agricultural practices in Shixini and how did the local community respond to these changing conditions?* Firstly, local perceptions of agrarian change indicated that low field productivity was the major reason for the decline in field cultivation and the rise in garden cultivation. They did not indicate whether declining soil fertility or a lack of resources was the more common or more important constraint. However, the analysis of constraints on current agricultural practices was more successful in identifying the major obstacles. The size, structure and wealth of households were found to have had a strong influence on their ability and need to cultivate. In addition, wealthy and large households invested greater effort in cultivation than poorer and less capable households. Finally, local perceptions of constraints on current agricultural practices indicated that while environmental limitations such as drought, pests and poor soils were common to both garden and field cultivators, a lack of labour and resources inhibited field cultivation more than garden cultivation. Thus only wealthy households had sufficient resources to cultivate fields.

This evidence indicates that a lack of labour and draught oxen had a more significant impact on cultivation practices than declining soil fertility. However, while most households who cultivated a garden and field had sufficient resources to do so, there were also a number of wealthy and

resource rich households who did not cultivate fields because fields were unproductive. In this case low soil fertility was probably the main constraint on cultivation, particularly if the returns from garden cultivation were much higher. This evidence suggests that the majority of poor households lack the resources to cultivate fields but that low soil fertility in fields also inhibits field cultivation. No stronger conclusions could be drawn from the available data. Further research and indepth interviews with local residents would be necessary to clarify these findings. In all likelihood, respondents may not have understood the question relating to poor soils or else their understanding of the relationship between soils and yields differed from western conceptions.

The influence of dwindling access to agricultural markets on cultivation practices remains unclear. According to respondents, the sale of agricultural produce to traders declined when the European traders left during the 1960s and 1970s. This coincides with the decline in the area of land under cultivation and may have encouraged the process. However, no respondents associated the change in agricultural practices with declining market opportunities. In addition, the historical evidence already considered showed that market opportunities had diminished during the early part of the century.

The survey also showed that Shixini residents had abandoned fields and expanded garden cultivation in response to the declining productivity of fields. The land-use data showed that the decline in productivity was a result of poor cultivation techniques amongst increasingly impoverished residents.

Although the sample size was very small, the results of the survey compared very favourably with other studies. The data on agricultural practices yielded very similar results to McMillan's (1989) survey of agricultural practices amongst sixty households in a small portion of Shixini. In addition, the socio-economic characteristics of the Shixini sample were very similar to Osmond *et al.*'s (1983) survey of the south western districts of Transkei and Moll's (1984) study of Roza in the Qumbu district. This indicates that the present questionnaire survey results can be accepted as valid.

Unfortunately, the questionnaire yielded little additional information to that already available from historical sources and social science studies. This was because the questionnaire had too broad a focus. Rather than concentrating on local perceptions of change and the constraints on agricultural activities, the questionnaire focused largely on household characteristics and current agricultural practices. Consequently, insufficient data on local perceptions were collected. This problem arose because the questionnaire survey was undertaken before the secondary sources

and historical records had been fully examined. Thus rather than supplementing the historical data, the questionnaire reproduced much of it. A much narrower focus on local perceptions and less structured, indepth interviews with residents would have made a much more useful contribution to the thesis.

Chapter 6: Conclusion

This thesis originally set out to address the following question: *What were the major socio-economic and environmental factors that stimulated agricultural change in Shixini and how did the local community respond?* The aim of this chapter is to consider whether the preceding chapters answered this question.

Chapter three examined the history of agrarian change in Gatyana since the 1800s. It became clear that during the colonial period the Gcaleka political economy had been undermined, changed and preserved in various ways. Changes in the regional political economy, colonial interventions and Gcaleka responses eventually lead to the growth of peasant production. Peasant activities in Gatyana grew very slowly between 1800 and 1877 but increased significantly once Gcalekaland was incorporated within the Colony. The extension of magisterial rule over Gatyana involved the imposition of taxes and an increase in the number of missionaries, recruiters and traders operating in the district. These factors combined to force the Gcaleka people to expand production and increased the demand for local produce and migrant labour. Peasant production expanded rapidly, despite the disastrous effects of Rinderpest and East Coast Fever, and reached a peak during the 1930s. After the 1930s per capita agricultural output in Gatyana and Transkei as a whole, declined slowly until the 1950s and 1960s and then dropped off dramatically.

The historical material consulted indicated that the gradual decline of agricultural output between the 1930s and 1960s was the result of a combination of socio-economic and environmental factors which interacted in a complex manner. To begin with the discovery of gold and diamonds increased the demand for African labour. In an attempt to increase the labour supply the mining industry improved it's labour recruiting operations and encouraged traders to extend credit to their customers with the eventual aim of forcing peasants into wage labour. Mining capital also allied itself with white farmers to secure a cheap and adequate labour supply. This alliance was successful in introducing a wide variety of racially discriminatory measures which forced African peasants off white farms and undermined their competitive position in relation to white farmers. The economic depression during the 1920s and an increase in taxation also decreased peasant incomes from the sale of agricultural produce and forced larger numbers of peasants into migrant labour. Environmental degradation added to these pressures. Population growth and land shortages forced peasants to expand cultivation on to marginal land and disrupted shifting cultivation methods. Fallow periods were shortened and suspended. In the absence of fertilisers, such methods eventually undermined yields and exhausted the soil. The expansion of pastoral production also led to overstocking. It seems that

the Transkei reached its peak carrying capacity during the 1930s. Once overstocked, continued overgrazing led to the deterioration of the grassveld and a reduction in it's carrying capacity. The condition of the livestock deteriorated and numbers dwindled with a detrimental effect on cultivation since cattle were essential for ploughing fields.

The historical and land use data provided the clearest indications of the reasons for the sharp decline after the mid 1950s. The rapid reduction in the area of land cultivated and per capita output coincided with a rapid population increase. Explosive population growth and a decline in total stock numbers resulted in a drastic per capita reduction in household livestock holdings. These dwindling or non-existent resources then forced rural households to abandon cultivation or greatly reduce the area of land cultivated. The questionnaire survey confirmed this evidence but indicated that environmental constraints were also important.

The land use analysis and sample survey revealed the response of the rural community to the changing socio-economic and environmental conditions. After the mid 1950s fields were largely abandoned and gardens increased in number and size. According to local respondents fields were abandoned and replaced by gardens because the former were unproductive. Poor cultivation practices due to a lack of resources, drought and low soil fertility were the major causes of dwindling yields. Garden cultivation expanded because gardens were smaller and located next to the homestead thus reducing the amount of time and effort necessary for cultivation. They were also closer to livestock enclosures and easier to manure. Intercropping and shifting garden boundaries also helped to maintain long term yields in gardens. Finally, gardens were fenced and thus better protected from damage by livestock. The expansion of garden cultivation thus entailed a move towards more intensive cultivation methods which made more efficient use of household resources, maintained long term productivity and had a less detrimental effect on the soil. Consequently, yields may not have declined at the same rate as the area of land cultivated. It was also clear that it was largely wealthy households who were able to continue with field cultivation. However, these households also cultivated gardens which tended to be above average in size. Thus the area of land cultivated by wealthy households was far greater than that cultivated by the majority of poor households.

The analysis thus generally succeeded in addressing the question posed. The approach which informed the analysis ensured that the thesis achieved it's original aims. According to the regional political ecology and political economy approaches, agrarian change was expected to be the result of interaction between changing socio-economic, political and environmental processes operating at a regional and local level. Human agency was seen to play an important role in this process. Consequently, the thesis examined both regional and local dynamics operating prior to

the 1930s and throughout the period under study. This entailed an examination of changes in the southern African economy, State policies, class conflicts within and between the ruling and dominated classes, the impact of socio-economic changes on the environment, the effect of environmental degradation on the rural political economy and local responses. The selection of sources used facilitated the analysis of this wide variety of factors. However, the questionnaire survey did not provide sufficient detailed information on the dynamics of change within Shixini because it had too broad a focus. Thus the discussion of local dynamics and perceptions remains incomplete.

All that remains to be considered is the question of the extent to which the Shixini experience can be applied to other rural communities in the Transkei. Regional generalisations are difficult and problematic. On the one hand it was clear that Shixini had a very similar socio-economic profile to the rest of Transkei's rural areas. The historical evidence also indicates that agricultural decline had been a feature of most Transkeian rural areas since the 1930s. However, despite the strong regional similarities, generalisations are problematic as local differences in environmental conditions, culture, historical experiences, the implementation of State policies and local response ensure that processes of agricultural decline and change occurred or began at different times and may have taken different paths. The differences between betterment and non-betterment illustrates this point.

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Appendix 1

Table A.1 **No. of households, with a garden, in each stock enclosure size class.**

Stock enclosure size classes	Households 1942	Households 1962	Households 1982	Change 1942-62	Change 1962-82
0	122	109	84	-10.7	-22.9
1	23	45	31	95.7	-31.1
2	50	31	12	-38.0	-61.3
3	40	17	3	-57.5	-82.4
4	61	9	4	-85.2	-55.6
5	74	15	3	-79.7	-80.0
HH with Garden	370	226	137	-39	-39

Table A.2 **No. of households, without a garden, in each stock enclosure size class.**

Stock enclosure size classes	Households 1942	Households 1962	Households 1982	% Change 1942-62	% Change 1962-82
0	10	64	106	540.0	65.6
1	6	55	189	816.7	243.6
2	6	75	141	368.8	88.0
3	9	49	89	444.4	81.6
4	29	49	79	69.0	61.2
5	61	67	95	9.8	41.8
HH w/o Garden	131	359	699	174	95

Appendix 2

Questionnaire Survey Shixini, 1991

Household head's full name:.....

Respondent:.....

Questionnaire No.:..... Date:.....

Location:.....

Number of huts:.....

Size of stock enclosures:.....

Size of garden:.....

Family size, structure and income

1. a) How many people are there in your family (including absent migrants)? .....

   b) Please indicate how many males and females there are in each age category listed in the table below and their relationship to the household head?

Age classes	Tot F	Tot M	Relationship to Household Head
0 - 4			
5 - 9			
10 - 14			
15 - 19			
20 - 24			
25 - 29			
30 - 34			
35 - 39			
40 - 44			
45 - 49			
50 - 54			
55 - 59			
60 - 64			

Age classes	Tot F	Tot M	Relationship to Household Head
65 - 69			
70 +			

2. a) What are your main sources of cash income? Migrant remittances; Pensions; Disability grants; the selling of produce; other.

Specify other:.....

b) From which of these sources does most of your money come from? .....

c) Which is the next largest source of income? .....

3. Household migrants:

a) Specify the sex of each migrant. .....

b) Where does each migrant work? .....

d) How often does each migrant return to the household? .....

e) How long are each migrant's visits? .....

f) Does each migrant send earnings to the household or does he/she bring it home with them? .....

g) Does the migrant assist the family with the ploughing, planting and/or weeding of garden and field? .....

4. a) What food items does the household buy with their income? .....

b) How often does the household normally buy food? .....

c) Is there a specific time of year when you by more food than normal?.....

5. a) Which of the following agricultural goods does the household spend money on?.....

b) Do you buy livestock? What livestock? .....

c) For what purpose do they buy each type of livestock? .....

Livestock

6. a) How many cattle do you have in your care? .....

b) Have their number (i) Increased

(ii) Remained Constant

(iii) Decreased

c) For how long has this been the trend? .....

7. a) How many horses do you have?.....

b) Have their number (i) Increased

(ii) Remained Constant

(iii) Decreased

c) For how long has this been the trend? .....

8. a) How many sheep do you have?.....

b) Have their number (i) Increased

(ii) Remained Constant

(iii) Decreased

c) For how long has this been the trend? .....

9. a) How many goats do you have?.....

b) Have their number (i) Increased

(ii) Remained Constant

(iii) Decreased

c) For how long has this been the trend? .....

10. a) How many pigs do you have?.....

b) Have their number (i) Increased

(ii) Remained Constant

(iii) Decreased

c) For how long has this been the trend?.....

11. a) How many chickens do you have? .....

b) Have their number (i) Increased

(ii) Remained Constant

(iii) Decreased

c) For how long has this been the trend? .....

12. a) Do you have any other livestock? .....

b) Have their number (i) Increased

(ii) Remained Constant

(iii) Decreased

c) For how long has this been the trend? .....

13. a) Are you satisfied with the size of your herds? .....

b) Why do you think these trends in your herd sizes occur? .....

14. Do you have access to enough grazing for your livestock? .....

15. Is the quality of the grassveld excellent, good, satisfactory, poor or very poor?.....

16. a) Has the quality of the grassveld changed? .....

b) For how long has this trend been evident to you? .....

c) Why do you think this trend has occurred? .....

Cultivation: Gardens

17. a) Do you have one or more gardens? (Specify the no. of gardens) .....

b) If not, why do you not have a garden? .....

If yes, answer the following:

c) How often do you use your garden? .....

d) Did you use your garden(s) during the current growing season? .....

e) Did you use your whole garden or only part of it?.....

f) If you did not use your garden then when did you last use it? .....

g) Why do you not use your garden? .....

18. What crops did you grow in your garden during the current season? .....

19. If maize was planted, when did you plant your maize (during the current season)? .....

20. a) Did you hoe/dig or plough your garden? .....

b) If you ploughed, how many times did you plough your garden? .....

b) Were you able to plough your garden before the planting season began? .....

c) Did you use a ploughing company or hire a tractor to plough your garden? .....

d) If you participated in a ploughing company, what did you contribute to the company in terms of people, cattle and any other equipment etc.? .....

21. a) How many times have you weeded/hoed your garden already? .....

b) How many more times do you intend to weed/hoe? .....

c) How many times have you already used a weeding party for the weeding of your garden? .....

d) How many more times do you intend to use a weeding party? .....

e) Do you use a cultivator in your garden? .....

22. Did you use fertilizer, manure or a mixture of both in your garden? .....

23. a) Have the crop yields in your garden changed over the years? .....

b) Can you explain why you get these yield trends? .....

24. Have any of the following ever been an obstacle to the cultivation of your garden?.

Obstacles to cultivation	Never	Sometimes	Often	Always
Drought				
Floods				
Rainfall at inappropriate times				
Pests				
Wind				
Poor soils				
Grass invasion				
Lack of labour				
Lack of Technology				
Damage to crops by livestock				
Other:				

Can you think of any other possible obstacles to garden cultivation?.....

Cultivation: Fields

25. a) Do you own (have access to) or borrow one or more fields?.....

b) If not, why do you not have a field? .....

c) If yes, how often do you use your field? .....

d) Did you use the field(s) during this last season? .....

e) Did you use the whole field or only part of it? .....

f) If you did not use the field(s) then when did you last use it? .....

e) Why do you not use your field(s)? .....

26. What crops did you grow in your field(s) during the current season? .....

27. When did you plant your maize (during the current season)? .....

28. a) Did you hoe/dig or plough your field(s)? .....
b) If you ploughed, how many times did you plough your field(s)? .....
c) Were you able to plough your field before the planting season began? .....
d) Did you use a ploughing company or hire a tractor to plough your field(s)? .....
e) If you participated in a ploughing company, what did you contribute to the company in terms of people, cattle and any other equipment etc.? .....

29. a) How many times have you already hoed/weeded your field(s)? .....
b) How many more times do you intend to weed your field(s)? .....
c) How many times have you used a weeding party for the weeding of your field(s)? .....
d) How many more times do you intend to use a weeding party for the weeding of your field(s)? .....
e) Do you use a cultivator in your field(s)? .....

30. Did you use fertilizer, manure or a mixture of both in you field(s)? .....

31. a) Have your crop yields in your fields changed over the years? .....
b) Can you explain why you get these yield trends? .....

32. a) Do any of the following present obstacles to the cultivation of your field(s)?

Obstacles to cultivation	Never	Sometimes	Often	Always
Drought				
Floods				
Rainfall at inappropriate times				
Pests				
Wind				
Poor soils				
Grass invasion				
Lack of labour				

Obstacles to cultivation	Never	Sometimes	Often	Always
Lack of Technology				
Damage to crops by livestock				
Distance of fields from homesteads				

Can you think of any other possible obstacles to cultivation? .....

33. a) Can they remember a time when Shixini residents did not have gardens or had very small gardens and relied largely on fields? .....

b) Why did people change their cultivation practices?.....

c) When did the change occur? .....

Trading

34. a) Do you sell any of the following items to Traders?

b) Do you sell any of the following items to other residents?

Goods sold	Sell to trader	Sell to resident
Maize		
Other crops		
Cattle		
Other livestock		
Skins & Hides		
Wool		
Tobacco		
Crafts		
Other:		

b) If you do not sell your produce, can you recall whether you family (in Shixini) ever traded such goods with local traders? .....

c) Do you know when and why this trading came to an end? .....

d) If traders would buy your produce and crafts would you want to sell them? .....

35. a) Has anyone ever tried to change your farming practices? Yes/No

b) If yes, how have they tried to change your farming practices? .....

c) When did these things occur? .....

36. a) Do you think the younger generation will be farmers like yourselves? Yes/No

b) If yes, why? .....

c) If not, what will they do? .....

Appendix 3

Table A.3 CPI component scores

Scores	Consumers	Able-bodied adults	Cattle	Income
0.05	0			
0.07	1			3
0.09	2			4
0.2	3			5
0.4	4			6
0.6	5	0		7
0.8	6	1	0	8
1 (median)	7	2	1	9
1.2	8	3	2	10
1.4	9	4	3	11
1.6	10	5	4	12
1.8	11	6	5	13
2	12	7	6	14
2.2	13	8	7	15
2.4	14	9	8	16
2.6	15		9	17
2.8			10	18
3			11	19
3.2			12	20

Note: The largest number of cattle owned was 49 and this was given a score of 10.8

Table A.4 **Ploughing scores for the Cultivation Effort Index**

Method of turning the soil	Score
Hoeing	5
Ploughing themselves	3
Using a ploughing company	2
Hiring a tractor	1

Table A.5 **Weeding scores for the Cultivation Effort Index.**

Weeding method	Score with the use of a cultivator	Score without the use of a cultivator
Weeding themselves	4	5
Hiring labour	3	4
Using a Work Party	2	3

Table A.6 **Scores for households in each area size class.**

Area of land cultivated	Score
1 - 2999 m^2	2
3000 - 5999 m^2	3
6000 - 8999 m^2	4
9000 - 11999 m^2	5
12000 - 14999 m^2	6
15 000 - 17 999 m^2	7
18 000 - 20 999 m^2	8
21 000 - 23 999 m^2	9
24 000 - 26 999 m^2	10