

# Farming against the odds : an examination of the challenges facing farming and rural development in the Eastern Cape province of South Africa

Etienne Nel and Jack Davies

Department of Geography, Rhodes University, Grahamstown, South Africa

Department of Geography, University of Wales: Swansea, Singleton Park, Swansea SA2 8PP, UK

## Abstract

Recent political transformation in South Africa has laid the basis for significant socioeconomic change. One area in which the greatest socioeconomic disparities are discernable is the agricultural sector and rural development in general. Through the medium of a case study of the Eastern Cape province, the obstacles and opportunities facing the two predominant farming groups—emerging black small-scale farmers and white commercial farmers—are examined. The paper concludes with an examination of the economic potential of the former 'white' areas to sustain the resettlement of people previously excluded from that land market on racial grounds.

**Keywords:** agriculture; resettlement; rural development; South Africa

## 1. Introduction

South Africa's political rebirth in the early 1990s has laid the basis for significant changes in the nation's society and economy. The new government has pledged itself to improving the living conditions of the black majority of the population which, for generations, was denied access to adequate services and opportunities (ANC, 1994). Since 1994, significant gains have been made in infrastructural provision: for example, over 6 million people have been linked to significantly improved water supply systems (*Sunday Times*, 27 April 1997). Despite impressive gains, key obstacles remain and one important area in which action is required is that of rural development. As discussed below, enormous challenges of poverty and unemployment prevail in rural areas. The government's goal, as expressed by President Mandela, is clear in this regard:

The Government of National Unity is committed to an integrated rural development strategy which aims to eliminate poverty and create full employment by the year 2020. Rural people must be at the heart of this strategy. (Republic of South Africa, 1995, p. 5).

Within the context of rural development, the role of agriculture is clearly pivotal. As this paper illustrates, considerable problems confront the agricultural sector. It requires measures to enhance the existing base and, more importantly, to encourage the participation of those long denied access to the primary means of production. Clearly a "vibrant and expanded agricultural sector is a critical component of a rural development and land reform programme" (ANC, 1994, p. 102). Such a policy position calls for concerted action to address problems of access to land, extension support and training for people traditionally denied land.

This paper is based on a study of conditions in one of the country's largest provinces, the Eastern Cape (Fig. 1). Although conditions here are not identical to those in the other eight provinces, the broad processes identified by this study provide insight into the current rural development challenges in South Africa. This is one of the few provinces where the rural population exceeds the urban and it is also one of the poorest. Figures from the *Rural Development Strategy* (Republic of South Africa, 1995) confirm this, with 73.8% of the Eastern Cape population being classified as 'poor' compared to an average of 40% for the country as a whole. It is also characterized by deep contrasts between its two former black African Homelands (Ciskei and Transkei) and the extensive, predominantly white-owned, commercial farming districts in the rest of the province. This study focuses on the central parts of the province, a zone where black and white interdigitate. The deep contrasts between the two areas, and the reality that the white areas neighbouring the Homelands might well be the most logical targets for resettlement, justify a study of the current status of agriculture in the two areas and the potential of the white areas to absorb new, aspirant farmers. The harsh economic and political consequences of poorly applied racially based land resettlement are vividly illustrated by recent events in Zimbabwe, where the process seems to be threatening one of the key foundations of its economy and its general good standing in the eyes of the international donor community. This serves as a warning to South Africa not to set unrealistic aspirations in its own strategies (Financial Times, 1997).

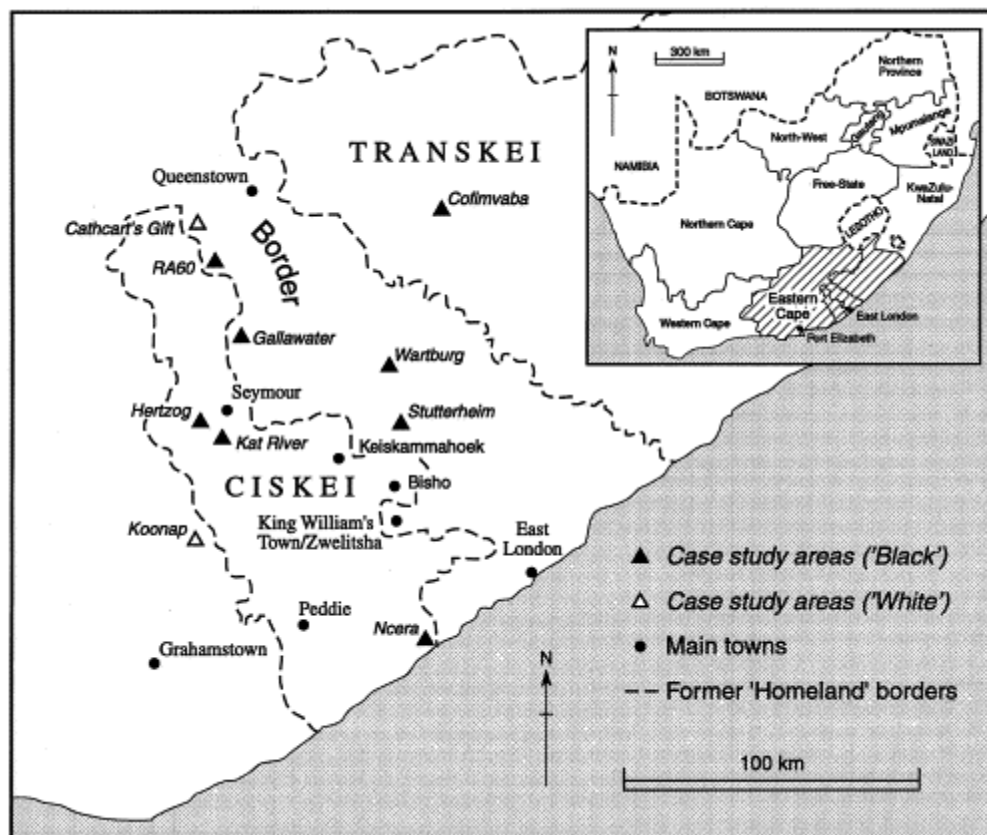


Fig. 1. The study area in the Eastern Cape, South Africa.

After briefly outlining the status of agriculture and current rural development thinking (in Africa in general and South Africa in particular), attention shifts to an examination of two key issues. First, we examine the deep contrasts between the two primary areas and the types of farming in the study area. This is based upon a series of detailed interviews undertaken with a range of black and white farmers in the central parts of the province. Whereas almost all the black farmers are in the former Homelands (Fig. 1), the white farmers interviewed were in likely areas of potential resettlement; namely, those districts bordering the former Ciskei Homeland. The second aim is to examine the potential for the subdivision of current extensive white farming areas bordering the Homelands into smaller units for the resettlement of black farmers. The research results are derived from a series of semi-structured interviews undertaken with both black and white farmers, on an individual basis, in the various areas examined (see ). In certain cases, such as Ncera and Wartburg, information was also derived from posing similar questions in group meetings.

## **2. Farming challenges in Africa**

If South Africa is to succeed in developing a successful rural development strategy, there is some merit in examining what has been happening elsewhere in the continent. Unfortunately much is negative. Between 1970 and 1990 the world food per capita index rose from 100 to 112, whereas in Africa it fell from 100 to 84 (in Asia it increased to almost 120). The Food and Agricultural Organization has forecast that by 2000 Africa south of the Sahara will be producing only 83% of its food requirements whilst in East and North Africa the figure falls to 61%. This is despite the fact that for most African countries more than 30% of GDP comes from agriculture and more than 60% of the population depend upon agriculture for their livelihood (World Bank, 1997). Less than half of Africa's population has access to clean water and in five countries the figure is below 25%. The incidence of underweight children has hardly changed in sub-Saharan Africa since 1970, whereas there has been a considerable improvement elsewhere. By 2000, about half of the population of sub-Saharan Africa will be living below the poverty line, with both numbers and percentages on the increase. In summary, between 1970 and 1990 the population doubled, whereas food production increased by only 50%, and the gap continues to widen (*World Development Report*, various years; Thomas, 1994).

The reasons for this situation are complex. Climatic variability has been cited. The Sahel countries have experienced three major drought periods during the 20th century. Many agricultural development projects here were developed during the unusually good rainfall years of the 1950s and 1960s, leading to a desertward expansion of population. Elsewhere, in Zimbabwe, it has been estimated that, without external food aid, two-thirds of the population would have died during the 1992 drought (statement by the Zimbabwe Minister for Higher Education, 1994). By contrast, the 1998 floods in East Africa have also had a severe impact upon food production.

Such climatic vagaries have always been present but have been made more apparent by population growth. However, much of Africa is not overpopulated and the Club du Sahel argue that in West Africa food production will only increase once a denser population supports a better road network and farmers have better access to urban markets. Club du Sahel (1995) argues that Africa's food shortage stems from a lack of incentives for subsistence farmers to produce a surplus because markets for domestic food crops are inaccessible. Seavoy (1989) has expressed a similar view regarding East Africa, arguing that cash incentives and technical inputs by themselves are counter-productive.

Besides long-running civil wars, of which those in Sudan, Angola, Mozambique and Rwanda are the worst examples, other important political factors operate. The ruling elites are urban based and often externally educated. As a result, rural policies are often out of touch and out of sympathy with the rural masses, resulting in top-down policies ill-suited to the needs and aspirations of the African peasant. Considerable resources have been directed into large-scale 'revolutionary' rural development projects, usually with poor results. In his plea for a more 'human'-based scale of development, Carr (1977, p. 6) wrote of large projects: "The more you spend on them the less likely they are to succeed". Tanzania's *Ujaama* village programme, the Algerian 1000-village programme, Sudan's enormous expansion of irrigation over the past 40 years and its ecologically unfriendly mechanized agricultural programme are cases in point. The difficulties experienced by all these development programmes can be explained in part by misconceptions as to peasant priorities. Frequently a secure food and feed supply are top priority, cash income coming some way down the list. Peasants are, for a variety of reasons, geared to a 'minimization of input' rather than a 'maximization of output', running counter to many conventional views of development. Unless peasant farmers can identify with the aims of an agricultural development programme, it is unlikely to succeed. Rural development projects need to be not only environmentally and economically sound, but must also be socially acceptable to those people 'planned' to take part.

Further, export crops help to support government revenue and bring in foreign currency, and so research investment has been lacking for food crop production and traditional peasant agriculture. Food shortages have been exacerbated by the migration of the able-bodied to the cities, leaving agriculture to the elderly and the very young. In some parts of the plains west of the White Nile in the Sudan, less than 15% of farmers are aged less than 35 (Davies & Alredaisy, 1995).

Urban populations in Africa since the 1960s have often been growing at the rate of 5–7% per annum. Lagos in the 1960s reached 13% and Khartoum in the 1980s exceeded 10% (Davies, 1991). Among many reasons for urban growth has been the low status of agriculture and lack of rural facilities, resulting from government bias in favour of city investment associated with the need to keep the urban masses at least quiet, even if not happy. As Marshall (1994, p. 294) summarizes: 'The new elites have given priority to the cities where they live extracting the maximum surplus from the impoverished countryside'. Governments have often been more concerned with industrialization and mining developments, sometimes with catastrophic results. Sierra Leone in the 1960s and 1970s described itself as 'the Land of Iron and Diamonds'. No iron ore is now produced and most of the good diamond deposits have been worked out. One result of all this is the low esteem with which farming and rural life are held in many parts of the continent. In Uganda in the 1960s, UNESCO learnt that many rural parents were paying school fees so that their children could avoid farming; only 13% of rural children claimed to want to farm (Davies, 1968). The 1990s situation in much of Africa has changed little:

The rural exodus is a great problem throughout Africa. The young think that they will be happier in town with electricity, running water and bright lights, but when they get there they cannot find work. Then they get very frustrated and turn to banditry, theft, delinquency. The answer is not to stop education, but to educate people to realise the value of village life and to make living in the country more attractive. (Gabon Government official quoted by Marshall, 1994, p. 147).

Despite the terrible legacy of apartheid, South Africa does not suffer from many of the ills of the rest of the continent, and according to virtually every statistic it is better placed. Nevertheless, there are certain lessons to be learnt. Any future policy must take into consideration a number of factors:

- the vagaries of climate;
- the need to develop an adequate road network and marketing system to give the farmer a reasonable return for labour without recourse to overstocking and over-cultivation;
- the social needs and aspirations of people with different cultural backgrounds; and
- that large, grandiose schemes require a great deal of careful consideration.

So often, in such cases, the effect on those 'suffering' the development is forgotten. All schemes need to be not only environmentally and economically sound, but also manageable and socially acceptable. All this will count for little unless there is political stability and trust between government and people. The political situation has been compounded in South Africa by the country's history of racial discrimination and prejudice formerly enforced by a racist government.

### **3. The current status of agriculture and rural development in South Africa**

Agricultural production in South Africa constitutes just over 5% of the country's GDP, down from the 20% it enjoyed in the 1930s. Key activities undertaken are maize farming, wheat, deciduous and subtropical fruit, sugar cane, vegetables, poultry, sheep and goats (for wool and meat) and the rearing of cattle. Environmental constraints are a serious obstacle; "farming conditions are not ideal. Rainfall is unreliable and drought a recurring problem" (Editors Inc., 1997, p. 78). As a result, although 80% of the country's surface area is used for agriculture, only about 15% is arable. This naturally poses serious challenges to plans for land resettlement for previously disadvantaged black rural communities on small units.

In order to boost agricultural activity, particularly amongst the black rural population, issues of access to land and the provision of adequate infrastructure and extension support will first need to be addressed. The apartheid-induced development backlog is such that in many, predominantly black, rural areas less than 1% of residents can be classified as full-time commercial farmers (Bembridge, 1987). Sub-subsistence activities and urban dependence characterize the majority of rural families (Fox & Nel, 1997). The need for land reform legislation and rural development strategies, given such a reality, is an undisputed necessity. The passage of the 1913 and 1936 Land Acts witnessed the extensive dispossession of black rural communities and their confinement to the racial reserves (the Homelands) which constituted only 13% of the area of the country (Pickles, 1991). The fact that the carrying capacity of the land had already been exceeded in 1918 in the case of the Ciskei Reserve is indicative of the severity of the problems that prevail. The near collapse of African commercial farming by the 1980s (Bembridge, 1987) in these areas is a deep cause for concern and a natural argument for intervention. The new government has clearly been active in trying to address past injustices: by November 1996, almost 2 million ha of land had been redistributed, partially through land claims resulting from earlier dispossession (Editors Inc., 1997). In parallel, the rights of farm workers on white farms to remain on the land have been given proper legal status through the 1997 Extension of Security of Tenure Act. Concerted programmes designed to promote broad-based development in the rural areas, and to obtain additional land through market mechanisms, for aspirant small-scale black farmers, have made much slower progress.

In parallel with the rectification of past injustice through 'land restitution', the government is also committed to a policy of 'land redistribution' through the use of land already on sale, land acquired unfairly and the redistribution of state land. The goal is that the "programme must be demand-driven and must aim to supply residential and productive land to the poorest section of the rural population and aspirant farmers" (ANC, 1994, p. 2). Although progress has been limited in this regard, the redistribution of land is clearly a key government objective.

A broadly based rural development strategy which can improve socioeconomic conditions in rural areas, catalyse economic growth and lay a basis for more productive agricultural activity is clearly an urgent priority. To achieve this, the following salient points are identified in the Rural Development Framework (draft) (Republic of South Africa, 1997), 'A 2020 Vision':

- agricultural diversification;
- an 'economy of participation' for local residents;
- periodic markets;
- commercial and service diversification;
- government support and infrastructural provision;
- water provision;
- local government support;
- access to employment, housing and land;
- improved conditions for children;
- a productive environment; and
- the reduction of poverty.

The justification and need for such interventions are undisputed. This paper does not examine all these issues, but rather focuses on agriculture, with its contrasting black and white sectors.

## **4. Rural realities in the Eastern Cape**

From a physical viewpoint a key controlling influence is exercised by the Eastern Cape's soils and climate. Broadly speaking, west of Port Elizabeth the rainfall has a winter maximum, whereas the areas northeast of East London experience a summer rainfall maximum. Thus, in the intermediate zone rainfall can be highly variable from year to year. Mean annual rainfall totals in the coastal and eastern part of the province exceed 400 mm, tailing off rapidly away from the coast. Temperatures are rarely a problem for agriculture, though frosts occur inland. In summary, the climate can be considered as semi-arid, being dry and warm throughout most of the year. To compound these difficulties, extensive areas are characterized by poor, shallow soils which are not conducive to intensive, arable farming

(Swart, personal communication, 1994). The dominant vegetation communities are subtropical thicket, a little afro-montane forest, and grasslands. The subtropical thicket is expanding in many areas, replacing the grasslands and forests as a consequence of heavy grazing pressure (Tinley, 1977; Acocks, 1988).

Culturally, since the 18th century the Eastern Cape has been a zone of racial mixing and conflict. The area was occupied by southward-moving black tribes and eastward-moving white settlers leading, in the 19th century, to a zone of conflict and tension (Davenport, 1991). Emerging patterns of difference and separation were later enshrined in laws enforcing white dominance and access to the most extensive land and the key means of production. The formation of the two racial reserves of Ciskei and Transkei and the resettlement of thousands of people to them compounded differences, particularly in terms of the small size of landholdings allocated, increased rural densities and limited access to state support and infrastructure. The net result was the effective collapse of what had become a vibrant black commercial farming sector by the beginning of the 20th century (Bundy, 1979). This has led to the entrenchment of a dual rural reality. The former Homelands are characterized by extreme overcrowding and frequent environmental collapse. The white areas, on the whole, have been characterized by low population densities and reasonably high levels of productivity. The drier, more marginal areas, however, have suffered from erosion and diminishing stock numbers. These two distinct, contrasting areas are now examined separately. The severity of the problems facing the former Homelands justifies the significantly greater attention which they receive.

#### **4.1. Rural realities in the former Homelands of the Eastern Cape**

The Eastern Cape's economy in general is characterized by a series of impediments. There is effectively no mining base, manufacturing levels are below the national average and industrial firms are concentrated in the primary urban centres. Unemployment levels are extremely high, ranging from 16 to 85% in the various rural districts (Development Bank of Southern Africa, 1991 and Development Bank of Southern Africa, 1994). Many inhabitants rely on gifts, state pensions and migrant labour remittances for household survival. Agriculturally derived income in Ciskei does not exceed 10% of the average black rural dweller's income (de Wet, 1993) and less than 1% of black rural dwellers can be regarded as full-time commercial farmers (Bembridge, 1987). The average male absenteeism rate is 31.3% (Development Bank of Southern Africa, 1994) and many people are forced to rely on the informal sector, including the hawking of foods and mechanical repairs, for their economic livelihood. As a result it is no exaggeration to assert that farming is not the chief occupation of black rural dwellers in the former Homelands. Rural women are particularly hard hit by prevailing poverty and unemployment levels and are in the most urgent need of support and assistance. The seriousness of rural poverty, low employment and high dependence levels requires that urgent attention be given to the question of employment generation.

By 1918, land in the Ciskei could no longer provide for the subsistence needs of the population (Switzer, 1993). Further overpopulation and overstocking of the land induced serious erosion and enhanced the deteriorating conditions. By 1925 household cash income from production was about 22% of what it had been in 1875 and cash expenditure was less than half (Switzer, 1993). In 1948, only 20% of the Ciskei was deemed suitable for arable cultivation. Economic conditions in the area worsened, destitution and dependence increasing in parallel. In certain districts up to 75% of the able-bodied men have become migrants working outside the district on a semi-permanent basis. Decades of government discrimination and manipulation clearly succeeded in forcing the black African populace into a position of dependence upon European capitalism, entrenching their position as a servile

proletariat. The adoption of apartheid as a state policy after 1948 exacerbated conditions. The government perpetuated the view that the Homelands were labour reservoirs, but simultaneously overlaid this notion with its separate development ideology (Davenport, 1991; Pickles & Wood, 1992). Large numbers of people were forcibly removed and resettled in what were already seriously overcrowded rural areas.

Details of the current position in Ciskei have been provided through the detailed research of de Wet (1993) and Sperber (1993) in the Keiskammahoek District. Here, in rural villages, the formal sector employs only 13–32% of potentially economically active people. Unemployment varies from 23 to 42% in the same areas. Research also established that, at most, 31% of earnings are earned locally or through agricultural sales, the balance coming from pensions (up to one-third of income) and remittances. Education, health and social service facilities do not meet the existing demands, particularly in the more isolated rural communities. The rural areas in Ciskei have reached the position of generating minimal output and any development initiative would have to begin with concerted programmes to revive the environmental and economic base. Given such harsh conditions, it is small wonder that land restitution and resettlement are key issues in the rural development strategies of the new South African government.

## **5. Interviews with small-scale black farmers in the Eastern Cape**

To assess in more detail the difficulties currently faced by small-scale black farmers, interviews were undertaken with representatives of this category at six different locations (see Fig. 1), four in the former Homelands (three in Ciskei, one in Transkei) and three in the Border zone between. Commercial farming in the former Homelands is effectively non-existent, though many households keep occasional animals and cultivate kitchen gardens. Seldom are these undertaken as a major form of activity. In the former Homelands where there are some small plots available (often of about 1 ha), the recent suspension of state ploughing services, the small-scale nature of production and the isolation of such small producers from the market, which is geared to the bulk produce of the large commercial farmers, are serious issues of concern (Meyer, personal communication, 1996; Nkayae, personal communication, 1996; Nkosinkulu, personal communication, 1997). Emerging black farmers do not have access to the levels of state assistance and market share which the government previously guaranteed to white farmers. Under these conditions, trying to penetrate established markets is extremely difficult. This situation will require national-level support and intervention if new farmers are to stand a realistic chance of success. It is important to reiterate the limited nature of small-scale black commercial farming. The people interviewed are representative of a tiny rural minority in the former Homelands who still have some attachment to commercial farming.

The difficulties facing any governmental intervention to assist in the emergence of a class of successful commercial small-scale black farmers are starkly illustrated in the following analysis.

### **5.1. Ciskei**

#### **5.1.1. Hertzog**

Here a black community has successfully established a cooperative which is engaged in intensive market gardening under irrigation. This is despite a legacy of being denied access to the land, until recently, and the absence of external support (Nel, Binns & Hill, 1997). Despite the impressive results



achieved by these farmers, their biggest obstacle to further success is their inability to compete effectively on the open market. They have no truck to take their produce to market and are dependent on wholesalers coming to them. In a system where the market is geared towards the requirements of large producers, it is difficult for such small producers to capture a market share (Meyer, personal communication, 1996).

### **5.1.2. Kat River**

In the Kat River valley, as part of a black empowerment drive, 14 black farmers were helped to set up commercial operations on former state citrus estates. Money was accessed from national sources and initial extension support was provided by the para-statal agricultural organization, Ulimicor. The demise of this latter body has jeopardized the position of the farmers, who lack the resources and machinery to undertake the necessary replanting of trees and transportation of produce. To a significant degree the resultant vacuum has been partially addressed by their joining a citrus cooperative which, traditionally, had only catered for white farmers (Jonase, personal communication, 1997). The degree of success which they have achieved suggests that there is scope for black farmers to move into commercial agriculture, if it is undertaken on an extensive basis and with adequate support services. Nevertheless, it is important to remember that these farmers are operating in one of the few irrigated valleys of the Eastern Cape. The aforementioned drought risk and other constraints are, however, sobering thoughts. Nonetheless, this example of black and white cooperation is inspirational and has the potential to serve as a model for other farmers in other areas.

### **5.1.3. Ncera**

The situation in this coastal community with some of the environmentally better conditions for farming (annual average rainfall c. 750 mm) is very different from Hertzog and Kat River. Thirty aspirant black farmers are anxious to farm more intensively. Their access to small pockets of land could certainly make a key contribution to household income and food supply. However, the suspension of state ploughing services, low local capacity levels and their inability to secure external finance and support have impacted extremely negatively on the local situation (Nel, 1995). The Ncera farmers are effectively unable to farm their small plots of land in the absence of external support. In many areas of the former Homelands these are key factors making it virtually impossible for emerging commercial farmers to operate (Nkosinkulu, personal communication, 1995).

## **5.2. Transkei**

### **5.2.1. Cofimvaba**

In cases where voluntary resettlement by black people within a former Homeland has occurred, the picture is a bleak one. In Cofimvaba, a group of approximately 100 households voluntarily settled on a defunct state irrigation scheme. Despite having the advantage of prepared fields and access to water, there has been no external support or advice. The farmers have undertaken market-gardening, but the turnover has been so low that none claim to have earned any money in the 3 years that they have lived on the land. Income derived is centrally pooled to cover the costs of inputs and the community ekes out an existence in the hope that external support will eventually turn the initiative into a viable project (information from 1997 site visit and Gibberd, personal communication, 1997).

## **5.3. Border zone**

### **5.3.1. Gallawater**

This venture clearly demonstrates some of the major difficulties faced by attempts to establish black smallholdings in the Eastern Cape. This was a white-owned, irrigated farm of 198 ha producing crops, rearing animals and supporting one farmer and his workers. The black community across the border in the former Ciskei Homeland decided that possession of this farm would suit their community very satisfactorily. They secured a government loan to buy it commercially in 1995 and to settle 105 families as smallholders. Their basic problem, however, is that they cannot afford to resuscitate the irrigation system. They also have no plough or other machinery and have so far (1997) failed to farm commercially. Their activity has been restricted to household vegetables and some domestic stock grazing. Any available income has gone towards paying off the loan and house construction for the settlers.

### **5.3.2. Stutterheim**

The Stutterheim Development Foundation is running a pilot project to develop a black commercial farming community (Ferreira, personal communication, 1996). Three farmers have been set up on a 32-ha holding growing onions, spinach and other vegetables. The produce is sold locally and through their own stall. They also have two cows and sell milk locally. The Foundation has trained the farmers, provided various forms of advice and assisted them with marketing. So far it is not clear how successful this enterprise will be. In practice, the farmers have found it difficult to market their produce, and lack of electricity has made water pumping for irrigation very difficult. Thus lack of resources and financial back-up are curtailing their progress (Nkita, personal communication, 1996).

### **5.3.3. Wartburg**

Research undertaken in the Wartburg area in a black community trying to eke out an existence on state land revealed a depressing picture. Most people had abandoned farming long ago and now depend almost exclusively on state old-age pensions and/or remittances from migrant workers for their income. Although land is available, the poor quality of the environment and recurrent drought are serious impediments. Where farming is undertaken it tends to be the prerogative of old men, younger people seeming to be deterred by the hard work and low returns. Interviews with two of the most 'successful' farmers in the area in 1996 revealed a depressing picture (Fetsha, personal communication, 1996; Nacau, personal communication, 1996). In 1995 and 1996 there was almost no grain production owing to drought. To compound problems, the nominal success of the few farmers that there are appears to have provoked resentment in the community and, as a result, crops are stolen and fences cut, allowing animals to eat the young crops. In the case of Mr Fetsha (personal communication, 1996), stock-theft had dealt him an additional blow. His herd of over 70 cows had been reduced to only 20 in the space of 3 years. Such unfortunate practices do not bode well for small-scale farmers who genuinely wish to farm but have to live under similar conditions. This is a reflection of key sociological changes and the unfortunate breakdown of value systems, largely as a result of enforced marginalization and discrimination in the past.

The preceding discussion indicates the considerable obstacles facing black farmers in the Eastern Cape. The smallness of holdings, general lack of support and shortage of resources, especially finance,

are clearly compounded by crime, limited access to markets, low levels of agricultural education and inexperience. Even in cases where successful, commercial farming is occurring, as at Hertzog and the Kat River, poor market access and the need to improve the farming base are serious impediments. The inability of the successful Hertzog cooperative to secure guaranteed market access suggests that in the rare cases where small-scale farmers can succeed, the nature of the capitalist-driven market is in itself a major obstacle unless the farmers can become associated with an on-going, successful marketing system.

## **6. Conditions in the former white commercial districts of the Eastern Cape**

The history of white, commercial farming has been strikingly different. For generations, state support, access to extensive farms, infrastructure and services have ensured a radically different history and rural reality today. Such areas are characterized by large, extensive farms which are often several hundred ha in extent, have very low population densities and a reasonable degree of agricultural productivity. The mainstay of the commercial/white-owned rural area's economy has traditionally come from agriculture and forestry. The former has focused almost exclusively on the rearing of livestock, with limited cultivation being practised in the better watered and irrigated areas. Years of persistent drought, rural depopulation and a decline in the commercial value of animal products (wool in particular) have wrought their toll on the area, diminishing agricultural purchasing power, employment and the whole base of the region's economy (Nel & Hill, 1997). Even though the land in such areas is white owned, the majority of the population (c. 90%) are black and coloured (mixed race) farmworkers.

## **7. Interviews with white farmers in the Eastern Cape**

The concerns of the large-scale white pastoral farmer in the Eastern Cape are rather different from those of his black fellow countryman. They can be summarized as environmental, economic and political. The following comments are based upon interviews with white farmers in the drier parts of the Eastern Cape where long-term annual average rainfall is less than 400 mm. Here, farm enterprises are almost entirely pastoral. Although arable farming is not impossible, due to the variability of rainfall it is a hazardous activity, unless water for irrigation can be guaranteed. Interviews were also undertaken with agricultural officers, and comments made at a seminar on white farmer attitudes held in Rhodes University have also been considered (Roodt, 1996).

### **7.1. Environmental factors**

The frequent recurrence of drought has a devastating impact on economic returns, stock numbers and employment. Most of South Africa is drought-prone, obliging farmers to develop coping responses to deal with the phenomenon (Myburgh, 1994). The time needed for the natural vegetation and pasture to recover from drought impacts negatively on these areas (Hayes, personal communication, 1995).

In these drier areas away from the coast rainfall totals are very variable, both annually and seasonally. At Rockhurst, in the Koonap district, the long-term mean is 315 mm. The Koonap Farmers Association, in a memorandum complaining of government failure to provide drought relief, produced figures for 1983/4 showing that in many areas only 50% of the normal rainfall had been recorded.

They claimed that in some parts of their area there had been no shower in excess of 10 mm over the previous 10 months and that no streamflow had occurred since August 1981 (Koonap Farmers Association, 1984).

The attitude of white farmers to such rainfall variability has varied considerably. There is no doubt that in some cases they have continued to carry excess stock in the hope that the drought would go away. There are agreed stocking levels for pastoral properties. For example, Vaalkrantz (in the Koonap area, see Fig. 1) has an agreed stocking ratio of 1 LSU (livestock unit) to 6 ha. During the 1984 drought this was reduced temporarily to 1:10 (Koonap Farmers Association, 1984). It is clear from the Koonap Farmers Association papers that there was considerable resistance in some quarters, not only to these emergency reductions, but even to the agreed standard stocking levels, which some considered too low.

In contrast, some of the more progressive farmers believe that the agreed general stocking level figures are too high. Thus, in August 1996 Vaalkrantz farm was running at 60% of capacity, its owner John Berrington believing that in the long run it is much better to have too few animals on a property than too many. Understocked pasture regenerates more quickly after a drought. Similarly, the Bloomfield family at Rockhurst take the view that one should be ahead of the drought rather than having to respond to it. This, they believe, is an economic advantage, since stock reach higher prices when they are sold, and it is also environmentally sound as the veldt recovers more quickly when the drought is over. Other grazing strategies adopted to cope with rainfall variability and to maintain the veldt include having a mixture of grazers (such as sheep) and browsers (such as goats) in the flocks and herds, and having a carefully planned, well-distributed water point system with rotational grazing to avoid over-use of the range.

Supplementary enterprises are a hedge against drought and also assist when economic circumstances change. Providing suitable soils and water for irrigation are available, a wide range of crops can be successfully grown in these drier areas of the Eastern Cape, including chicory, maize, wheat, vegetables (including potatoes), citrus and other fruits. Some farmers diversify their livestock by ostrich-rearing, which is currently a profitable enterprise, while others rear angora rabbits, poultry and other small livestock. Some go in for tourism, which may vary from merely providing farmhouse accommodation through to safari packages, as in the case of Shamwari Game Park which lies some 60 km west of Grahamstown (see Fig. 1). Yet others ensure that some members of the family have jobs in town, especially in professional occupations. The diversification enterprises are often in the hands of the farmer's wife.

## **7.2. Economic factors**

Economically, the white farmers are affected by fluctuating prices almost as much as by the vagaries of the rainfall. In the past many have relied upon government drought aid, as shown by the papers of the Koonap Farmers Association (1996). However, the more progressive feel that drought aid is not advantageous in the long run as it encourages farmers not to undertake necessary changes in farm management. In any case, they say, such aid will not be available to them in the new South Africa. Sustainable farm planning is an essential prerequisite for success in these dry lands, with a constant monitoring of farm costs and income to ensure a proper cash flow. Without such a policy, debt is inevitable, burdening many white farmers. Drought relief disbursement by the government to white farmers in South Africa in 1992/3 amounted to Rand 844 million (SA Rand 10=approx. UK £1), out of total drought disbursements of Rand 1044 million (Singh, 1993). Singh concludes that drought in

South Africa is a recurrent fact of life but an avoidable disaster. Many of the white farmers of the Eastern Cape would agree with this assessment.

The importance of the stock industry in the study area is self-apparent and one of the unfortunate realities is that farmers are being subjected to an escalating incidence of stock theft. In the first half of 1996 alone, 38 000 head of stock valued at Rand 40 million were stolen from farms in the Eastern Cape (radio report by South African Broadcasting Corporation, 3 September 1996). Such action seriously impacts on the farming base, and in the most vulnerable areas farmers have often abandoned sheep farming in favour of other, less-suitable activities (Hayes, personal communication, 1995).

### **7.3. Political factors**

At the forefront of the minds of many white South African farmers is an unease about their future in the new South Africa. This lack of security is at present discouraging essential new investment in properties in the Eastern Cape. They fear that developments similar to those in Zimbabwe will occur as the government tries to provide more land for black farmers, and that expropriation of their lands may be one option. They point out that moves against them will not only harm the South African economy as a whole, but will also adversely affect the black African rural worker and exacerbate the drift to the towns (Singh, 1993). White farmers in the Eastern Cape have no objection to coexisting with black farmers providing that there is a level playing field (Roodt, 1996). They have grave reservations about some of the black farming schemes that have been suggested and are strongly against the development of cooperative farming, which they see as a recipe for disaster, pointing to its failure in many other parts of the continent (Roodt, 1996). They also see no future for successful smallholdings for black farmers in the Eastern Cape away from the wetter areas of good soil with adequate irrigation water enabling intensive cultivation to take place. In areas with less than 400 mm average annual rainfall, with poorer soils and without irrigation, a holding of at least 1300 ha is required to support a family with a good standard of living. Such large pastoral holdings allow for the adjustment of enterprises and grazing systems according to how and where the rain falls and encourage sensible destocking at the onset of drought. White farmers concede that black farmers might be prepared to accept lower living standards, but fear that small properties would lead to a repetition of the overstocking and land degradation that occurred in the former Homelands.

Regarding land availability for black farmers, they point out that large areas outside their holdings are simply unused in black areas and suggest these areas should first be rehabilitated for agricultural use before expropriating lands from white farmers. Many white farmers also question the notion that there are many black farmers who wish to take on the responsibility, or have the desire and education to become pastoral farmers. Their fears for the future are also enhanced by the increasing lack of civil security and losses of stock through theft.

Escalating violence, particularly against white farmers, has wreaked a heavy toll on the economy and psychology of the area. In the latter part of 1997, a murder of at least one farmer a week had become common in South Africa. There is a clear criminal motivation behind the action, which has provoked anger from the organized farming community over the state's inability to deal with the problem. Calls to take the law into their own hands and exact revenge have become commonplace (*Weekend Post*, 15 November 1997; South African Broadcasting Corporation, 5 December 1997). In a recent, well-publicized murder, a farmer's wife was executed in front of her four young children who were told by the murderers to "take a good look—this is how white farmers will be treated in future" (*Weekend*

*Post*, 15 November 1997). Such events have an extremely negative impact on farming conditions and future potential.

In the light of the constraints that farming is experiencing in the predominantly white farming districts, caution needs to be exercised in the planning and goal-setting of any resettlement/land transfer programme, to ensure that what is proposed is environmentally and commercially viable.

#### **7.4. Discussion**

In short, the white farmers' view is that many would welcome the emergence of a successful black pastoral farming community and there is clearly potential for this. In this dry zone there are many marginal farmers who would be prepared to sell to black farmers or the state. Many have good relations with their black neighbours but suffer from stock theft. So far, little progress has been made on this (Hayes, personal communication, 1995). The white farmers' fear is that unless the plans are very carefully organized and properly financed, they could lead to an environmentally disastrous situation in these dry pastoral lands. They point out that many of the successful white farmers have had generations of experience of coping with drought, changing economic circumstances and changing government policies. They question how many suitable black farmers there really are who want to become commercial ranchers and point to the not very encouraging results that are beginning to emerge from Botswana's programme of encouraging indigenous-run ranches. They do not believe that merely taking land from them, by whatever means, would solve any problems or create a viable black farmer class.

### **8. The potential for resettlement in the Eastern Cape**

If rural development for black farmers is to be undertaken it will have to be broad based and multi-faceted in approach. Seeking ways in which to provide adequate access to land for black farmers who wish to farm commercially will clearly need to go hand in hand with state support and financial assistance. The moral justification for such action cannot be disputed. Practical constraints could, however, seriously impinge on such action. In addition to issues such as a shortage of funds and trained personnel, questions can be raised over the economic and environmental viability of resettling what might be large numbers of black farmers in areas which, to date, have only been used for extensive farming. The prevailing low rainfall and poor soil quality oblige a reliance on extensive stock-farming in vast areas, with areas of less than 1000 ha often not being regarded as an economic unit (Wilmot, personal communication, 1998). Stocking ratios of 1 LSU per 3.5–6 ha are common in drier areas, which is indicative of the fact that extensive farming might be regarded as inevitable. Many of the stock farms in the districts surrounding the Homelands are significantly in excess of 1000 ha which, though catering for the radically different lifestyle of white farmers, still suggests that extensive farms are required to generate an adequate livelihood. Despite the fact that more intensive dryland farming could be an alternative, to date there does not appear to be evidence of successful small-scale farming in such areas.

The exceptions to this principle are the better watered coastal areas, or the limited number of irrigated farms, where farming on 1–2 ha is viable, as the Hertzog case study suggests. Over and above moral and political imperatives, the legitimate demands of black farmers and the lifestyle of white farmers, there are far broader economic and demographic realities and trends. One of the most logical target areas for resettlement, which is currently under discussion by the Department of Land Affairs, is the

area lying between the two former Homelands and fringing their northern borders (see Fig. 1) (Gibberd, personal communication, 1997). This area has significant environmental variations within it, ranging from the coastal plain to the arid interior. The broad demographic and economic potential of this zone for the purpose of black resettlement is examined next.

### 8.1. Rural population in the Border Zone

The major population groupings in the area consist of a small group (5–10% varying according to sub-district) of white farmers and their families who own most of the land in the area and a significantly larger group of black and coloured (mixed-race) farm workers and rural dwellers who live on the farms or in the small rural centres. Table 1 details the rural population figures. The three age classes broadly indicate the pre-reproductive and not yet economically active group, the potentially economically active and reproductive group, and the group traditionally viewed as economically inactive and dependent. The first key feature is the high dependency ratio, reflected primarily in the youthful nature of the population. Second is the gender imbalance within the economically active category, reflecting a shortage of local employment opportunities and the resultant male migration in search of work in distant urban areas. Third, after an initial slow population increase of 7% in 10 years, there has been a dramatic decline since 1980. This reflects economic recession and drought in the rural areas which has resulted in retrenchments in the agricultural sector and a movement to urban areas. In summary, between 1970 and 1991 the overall rural population density declined from 6.5 to 4.9 persons per km<sup>2</sup>.

Table 1. Rural population in the Border Zone

Age (years)	1970		1980		1991	
	Female	Male	Female	Male	Female	Male
0–14	20 107	20 171	20 263	20 252	12 833	13 504
15–64	21 563	14 860	22 887	17 954	16 431	15 232
65 +	1 905	1 655	2 338	2 189	1 653	1 395
Total	43 575	36 686	45 488	40 395	30 917	30 131
Grand total	80 261		85 883		61 048	
Increase (decrease)	–		7%		(29%)	

Source: Republic of South Africa (1976, 1985, 1992b).

### 8.2. Rural employment in the Border Zone

Table 2 reveals that farming is the major source of rural employment. There has been a dramatic decline in both agricultural and total employment. The figures reflect the contraction in the farming economy and the massive outmigration in recent years. Although unemployment numbers may have fallen, nearly 70% of the population are still economically inactive.

Table 2. Rural employment in the Border Zone

Category	1975	1980	1991
Agriculture and forestry	21 906	12 027	9 573
Total economically active	–	22 439	17 277
Total economically inactive	–	63 351	38 961
Total	–	85 790	56 239

Source: Republic of South Africa (1976, 1985, 1992b).

### 8.3. Agricultural production and sales in the Border Zone

Gross marketed agricultural products of the region by value are dominated by livestock sales (c. 94% over a 10-year average) (Republic of South Africa, 1992a). Summer cereals, winter cereals and vegetables constitute the balance of production (6%), with production fluctuating markedly, as a result of rainfall variations, from 7500 to 20 000 t for all crops in the entire area in the 1980s (Republic of South Africa, 1987 and Republic of South Africa, 1988). Attention of necessity must be accorded to livestock farming. The figures in Table 3 are indicative of the changes that have occurred in this sector as a result of factors as diverse as drought, stock theft and declining wool prices (for merino sheep and angora goats). Cattle numbers have remained relatively constant during the period, being more dependent on local demands for dairy and meat products. The low 1988 figures reflect drought conditions, which are borne out by the changes in the livestock stocking rates.

Table 3. Changes in stock numbers in the Border Zone: 1975–94

Animal	1975	1981	1988	1994
Cattle	162 917	180 891	43 642	193 102
Sheep	1 003 202	1 024 128	217 698	540 201
Goats	57 904	89 134	30 197	16 547
Total	1 224 023	1 294 153	291 537	749 850
Ha per animal	1.1	1.2	0.3	0.8

Note: total grazing land = 1 109 697 ha.

Source: Republic of South Africa (1975, 1987, 1988); Dohne Agricultural Development Institute (1995).

### 8.4. Implications for the Border Zone

The general decline in the number of animals kept by farmers and the loss of nearly half the agricultural employment opportunities have had serious repercussions for the rural population and the small urban centres that serve these areas. Under the current ownership and management system there



are clearly no realistic opportunities for the residents of neighbouring Homeland areas. Although the demographic trends contrast with the high population numbers in the Homelands, the constraints that are clearly being experienced by commercial farming suggest that the notion of establishing and resettling black farmers might not deliver the intended results. Although the process of land resettlement could be embarked upon, as the experience of Stutterheim and Gallawater detailed above suggests, extensive financial support and advice will be required. Even if farming can be established, the broad trends in the agricultural economy and the constraints experienced in the former white commercial areas do not give grounds for optimism for the long-term viability of small-scale farming. If resettlement policies are to be pursued, caution and sober judgement about what they can realistically achieve needs to filter into the planning process.

## **9. Assessment and conclusion**

The establishment of a flourishing new breed of black South African smallholder farmers operating in the commercial sector is an exciting prospect with a clear basis in social justice, especially in view of the treatment received by black rural dwellers in past decades. The history of a reasonably sound agriculture reported from the Ciskei towards the end of the 19th century is encouraging. On the other hand, the world has changed, and commercial agriculture with it. Many of the able-bodied and more enterprising have already left rural areas in search of a 'better life' in the towns. Rural life in the former Homelands has become a degraded mode of existence associated with high dependency on government handouts and remittances from those working away from home. Any journey through these areas today illustrates their run-down nature and the malaise in many rural settlements. At present, rural areas are not particularly attractive places, as the figures given in the preceding section reflect. The question arises as to how many urban dwellers with sound farming experience exist, and how many of these would really want to return to the countryside.

Even among the present black rural population it is not clear how many want the responsibility and uncertainty of running a commercial farm or have sufficient agricultural education to do so? Entrenched rural poverty and marginalization appear to be the causes of the destructive practice of stock theft which has restricted farming potential. Other hindering factors include drought, problems of access to land, shortages of funds, limited access to external markets and failure to penetrate established markets. These are indeed daunting challenges which will need to be addressed before the success of a new, emerging class of black farmers can be assured.

On the positive side, the population reduction reported from the Border area suggests that it might be easier to redistribute land to smallholders than if the population were still rising. Environmentally, too, the more coastal areas and river valleys are conducive to smallholder commercial agriculture; experience at Hertzog and Kat River seems to support this conclusion. In the drier areas, where livestock farming is the norm, the situation may be different. Here, there are inherent advantages in larger-scale enterprises, as the experience of the white ranchers would suggest, which would restrict, though not necessarily exclude, options for large-scale resettlement to smallholdings. In areas such as these, as well as in the region as a whole, other options in terms of rural non-farm employment also need to be explored and encouraged.

The evidence from the Eastern Cape suggests that it is quite possible for a new breed of commercial black smallholder farmers to develop, but that they will require considerable back-up in terms of finance and technical know-how. Experience from other parts of Africa demonstrates that, important

as they may be, these will not ensure success. A whole programme of rural development will be required, involving marketing systems, road networks and soil and water conservation (Seavoy, 1989; Marshall, 1994). Marketing is clearly a key challenge; in earlier decades, white farmers depended on state support and guaranteed access to markets. Emerging black farmers have access to neither and clearly defined national policy will be required to ensure them an adequate market share and meaningful support.

As the experience of Hertzog reveals, there also appears to be a role for cooperative enterprises among the farmers themselves, pooling their resources to obtain better prices for their products and lower costs for their inputs. Another possibility is to entice successful private entrepreneurs from the city to invest in the countryside. However, again evidence from other parts of Africa points to the potential problem of the wrong kind of entrepreneur interested merely in a quick profit at the expense of the land, rather than in its proper nurturing (Marshall, 1994).

In short, possibilities for resettlement in the Border area do exist: there are white farmers who would be prepared to sell their land; the environment can be managed and a network of rural centres already exists. The key problem is a managerial one. A piecemeal approach cannot suffice; concerted and coordinated action in the broad area of rural development will be required in order to ensure success.

## Acknowledgements

The financial support of the British Council in sponsoring a Rhodes University–Swansea University link scheme is acknowledged. The cooperation and assistance of the farming community in the Eastern Cape was appreciated. Trevor Hill's role with part of the data collection and the cartographic assistance of the Geography Department in Swansea is also acknowledged.

## References

- Acocks, J. P. H. (1988). *Veld types of South Africa* (Vol. 3). *Memoirs of the Botanical Survey of South Africa* (p. 57). Pretoria: Government Printers.
- ANC (1994). *Reconstruction and development programme*. Johannesburg: African National Congress.
- Bembridge, T. J. (1987). Considerations in agricultural extension for less developed areas in Southern Africa. In *Extension strategies for the year 2000*. SASAE Conference, South Africa.
- Bundy, C. (1979). *The rise and fall of the South African peasantry*. London: Heinemann.
- Carr, S., 1977. Settlement schemes in Africa: success or failure. *Reading Rural Development Communications Bulletin* 3, pp. 6–8
- Club du Sahel (1995). *Preparing for the future: a vision of West Africa in the year 2020. Summary Report of the West Africa Long Term Perspective Study*. Abidjan, Ivory Coast: CINERGIE.
- Davenport, T. R. H. (1991). *South Africa: a modern history* (4th ed.). Basingstoke: Macmillan.

- Davies, H. R. J. (1968). *Uganda: rural education in primary schools*. Paris: UNESCO.
- Davies, H. R. J. (1991). Population change in the Capital Region. In M. E. Abu Sin & H. R. J. Davies, *The future of Sudan's Capital Region* (pp. 132–141). Khartoum: University Press.
- Davies, H.R.J. and Alredaisy, S.M.A.H., 1995. Desertification: or perhaps not?. *GeoJournal* **37** 4, pp. 479–482
- de Wet, C. (1993). From reserve to region. Unpublished report, Grahamstown.
- Development Bank of Southern Africa (1991). *Economic and social memorandum: Region D*. Halfway House: DBSA.
- Development Bank of Southern Africa (1994). *South Africa's nine provinces: a humandevlopment profile*. Halfway House: DBSA.
- Dohne Agricultural Development Institute (1995). Data-bank, Stutterheim.
- Editors Inc. (1997). *SA 97–98: South Africa at a glance*. Craighall:Editors Inc.
- Financial Times* (1997). Zimbabwe's reform plans take a knock. *Financial Times*, 18 November, p. 5.
- Fox, R. F., & Nel, E. L. (1997). Pension payouts, periodic marketing and the continuance of urban dependence in rural South Africa: problems and prospects for post-apartheid rural development planning. In United Nations Centre for Human Settlement (Habitat), *Regional development planning and the management of urbanization: a global review*. Nairobi: UN Centre for Human Settlement (Habitat).
- Koonap Farmers Association (1984). Papers. Cory Ms. 17874. Rhodes University Library, Grahamstown, South Africa.
- Koonap Farmers Association (1996). Papers. Cory Ms. 17874. Rhodes University Library, Grahamstown, South Africa.
- Marshall, P. (1994). *Around Africa*. London: Simon and Schuster.
- Myburgh, D.W., 1994. The response of farmers to the drought hazard in the Karoo environment. *GeoJournal* **33** 4, pp. 401–410
- Nel, E. L. (1995). *Report of drought relief programmes*. East London: Independent Development Trust.
- Nel, E., & Hill, T. (1997). The role of small urban centres in economic recovery and regional development. In United Nations Centre for Regional Development Research project on Small Urban Centres, *The role of small urban centres in economic recovery and regional development* (pp. 138–162). Nairobi: UNCRD.

- Nel, E.L., Binns, T. and Hill, T.R., 1997. Development from below in the 'new' South Africa: the case of Hertzog, Eastern Cape. *Geographical Journal* **163**, pp. 57–64
- Pickles, J., 1991. Industrial restructuring, peripheral industrialization, and rural development in South Africa. *Antipode* **23** 1, pp. 68–91
- Pickles, J. and Wood, J., 1992. South Africa's Homelands in the age of reform: the case of QwaQwa. *Annals of the Association of American Geographers* **82** 4, pp. 629–652
- Republic of South Africa (1975). *Report on agricultural and pastoral production, 1971–1972*, 06-01-09. Pretoria: Central Statistical Service.
- Republic of South Africa (1976). *Population census, 1970: occupation and industry by district and economic region*, 02-05-06. Pretoria: Central Statistical Service.
- Republic of South Africa (1985). *Population census, 1980: industry by statistical region and district*, 02-80-06. Pretoria: Central Statistical Service.
- Republic of South Africa (1987). *Census of agriculture, 1981*, 06-01-17. Pretoria: Central Statistical Service.
- Republic of South Africa (1988). *Agricultural survey, 1986*, 11-01-02. Pretoria: Central Statistical Service.
- Republic of South Africa (1992a). *Agricultural survey, 1991*, 11-01-01. Pretoria: Central Statistical Service.
- Republic of South Africa (1992b). *Population census, 1991: economic sector by development region, statistical region and district*, 03-01-09. Pretoria: Central Statistical Service.
- Republic of South Africa (1995). *The rural development strategy of the Government of National Unity*. Pretoria: Ministry in the Office of the President.
- Republic of South Africa (1997). *Rural development framework*. Pretoria: Department of Land Affairs.
- Roodt, M. J. (1996). *The attitude of the white commercial agricultural sector in the Eastern Cape to land reform proposals*. Seminar Series. Grahamstown: Department of Sociology and Industrial Sociology, Rhodes University.
- Seavoy, R. E. (1989). *Famine in East Africa*. Westport, CT: Greenwood Press.
- Singh, K. (1993). Drought, relief and rural communities. Association for Rural Advancement, special issue 9.
- Sperber, F. (1993). Income patterns in Keiskammahoek. In C. de Wet, From reserve to region (pp. 56–101). Unpublished report, Grahamstown.

Switzer, L. (1993). *Power and resistance in an African society: the Ciskei Xhosa and the making of South Africa*. Pietermaritzburg: University of Natal Press.

Thomas, A. (1994) *Third world atlas* (2nd ed.). Buckingham: Open University.

Tinley, K. L. (1977). Habitat physiognomy, structure and relationships. In *Symposium proceedings*, University of Pretoria.

World Bank (1997). *World development report*. Oxford: Oxford University Press.

## **Appendix**

The following individuals (cited in the text) provided information for this study.

N. Ferreira (1996): Director, Stutterheim Development Foundation.

Fetsha (1996): farmer, Wartburg district.

V. Gibberd (1997): Department of Land Affairs, Queenstown.

Hayes (1995): farmer, Queenstown district.

Jonase (1997): farmer, Kat River valley.

C. Meyer (1996): project leader, Hertzog Agricultural Cooperative.

Nacau (1996): farmer, Wartburg district.

Nkita (1996): farmer, Stutterheim district.

Nkayae (1996): Chairman, Hertzog Agricultural Cooperative.

Nkonsinkulu (1995): farmer, Ncera district.

Swart (1994): Agricultural Extension Officer, Stutterheim.

Wilmot (1998): farmer, Grahamstown district.

