AN ANALYSIS OF THE CHARACTERISTICS AND CONSTRAINTS OF SMALL HOLDER COMMERCIAL FARMERS IN THE TRANSKEI REGION, THE EASTERN CAPE, SOUTH AFRICA

BY

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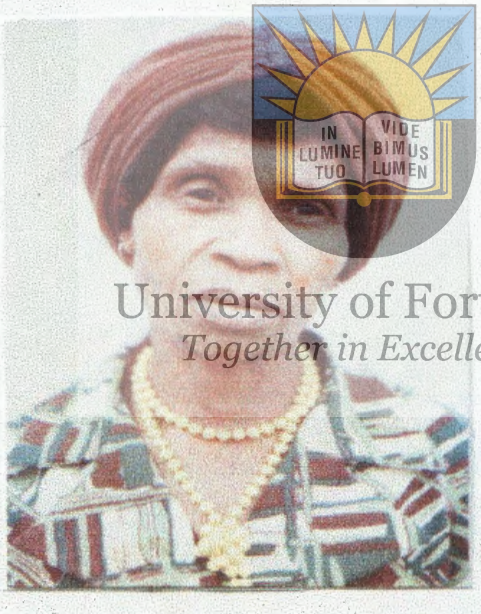
This study is dedicated to my mother who gave me all the support during the times of need.



- Special thanks go to Dr Wim Van Averbeke who motivated, guided and supported me in difficult times of data gathering in the Transkei. He has been a real inspiration to towards the completion of this study.

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SUMMARY

AN ANALYSIS OF THE CHARACTERISTICS AND CONSTRAINTS OF SMALL-HOLDER COMMERCIAL FARMERS IN THE TRANSKEI REGION OF THE EASTERN CAPE PROVINCE OF SOUTH AFRICA.

By

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DEGREE: **Master of Agriculture (Agricultural Economics, Extension and Rural Development)**

It has long been recognised that the Transkei region possesses good agricultural potential as a result of relatively high annual rainfall and generally favourable soils. Nevertheless, for a variety of historical and cultural reasons commercial agriculture has not developed to this potential. These limiting factors include the land tenure systems, historical importance of labour out-migration and remittances, and unrealistic past government policies. The infrastructure, including electrification, needed for conventional commercial agriculture has been generally lacking. With a total population of about 3.5 million, most of whom live in rural areas, Transkei is a net importer of agricultural products, including maize, and agricultural income provides only a tiny proportion of total household income.

In general, the researcher used a data gathering strategy that encouraged all commercial farmers to come forward and identify themselves. As a result of wide publicity approximately 300 farm households were identified. Subsequently, 135 households were included in a survey and answered questions contained in a questionnaire that was developed. The survey results obtained from these 135 households provided the principal information source to this report.

The study found that macro-livestock production was involved in 42% of these enterprises and accounted for 50% or more of gross cash sales in about the same proportion of enterprises, indicating the dominant commercial and cultural role of these livestock in Transkei. Micro-livestock (poultry and pigs) comprised the dominant production class in about one fourth of the enterprises, field crops and vegetables were dominant in 20% and 11% respectively.

Of 128 farm enterprises only 14 (11%) owned their own farm lands, 39% were farming on leased lands, and an equal proportion were located on communal lands
Of 132 reporting farmers, 71% were male and the households had income from salaries or wages and only 28% reported that 50% or more of total household income was derived from agricultural sources.

Only about 15% of the interviewed farmers had electricity to their residences. 73% of respondents reported extension to be most useful source of information while 27% considered radio programmes to be more useful.

The Transkei farmers marketed their crops directly to the consumers. The study has found that although gross annual crop sales of as high as R160 000 were reported, it was only about one fourth of the respondents who reported gross sales in excess of R10 000 annually. Mean annual sales of livestock was R9 000.

Average annual income from poultry sales among these producers was R6818 to a maximum of R60 000. Annual income from sales of eggs was insignificant in comparison, averaging only R333. All sales were made directly to the public.

Income from sales of pigs by these respondents averaged R3 700 in 1996 with the maximum being R17 000

These findings clearly demonstrate that agriculture is a viable economic option for many residents of the Transkei region. However, the scale of these agricultural enterprises is small in comparison to most commercial farm enterprises in the more developed regions of the Eastern Cape Province and elsewhere in South Africa. Most Transkei farmers lack access to electricity and most view this as a handicap and obstacle to further development of their farm enterprises

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CHAPTER 1

INTRODUCTION

1.1. BACKGROUND OF THE STUDY

The majority of the poor in South Africa are involved in subsistence Agriculture. An increase in productivity of the production of staple crops would be one direct way of increasing income of those households as well as increasing the *per capita* availability of staples. The increased availability of staples could also release resources that could be used to purchase foodstuffs for a better balanced diet and therefore contribute to the improvement of the nutritional status of the household. The general problem of agricultural development may well be the most critical development issue in Transkei (Transkei Land Reform Research Group, 1995).

South African Agriculture is characterised by inequalities, of which the most visible and most frequently referred to are those between large-scale, commercial agriculture and small-scale, mostly subsistence agriculture in the former homeland areas (Fenyes *et al, 1988).* The neglect of agriculture in the former homelands extends to the availability of information. The data for commercial agriculture are on a par with those for developed countries, and include detailed time series for inputs and outputs dating from the end of the Second World War. But for the former homelands there is a general paucity of data, with the only reliable source being sample surveys. (Development Southern Africa, 1996)

The Eastern Cape, of which Transkei forms part of it, is a predominantly rural province, with approximately 400, 000 hectares suitable for agriculture, another 300, 000 hectares suitable for forestry and 3,5 million hectares for livestock. Commercial farming in the province is presently controlled and dominated by a minority of white farmers who have always had access to finance, credit, expertise and other resources denied the black farmers who are predominantly operating on communal land. Black farmers operate in overcrowded conditions with few support mechanisms, (Growth and Development Strategy, Eastern Cape Province, 1997)

The Transkei and Ciskei Research Society state in its 1982 report as follows "We are faced with insidious deterioration of natural resources and rapidly increasing human and livestock pressure. There is a need to change our thinking about improving agriculture, which is the first step in improving the economic and social welfare of rural people. The question of what approaches would be effective in any efforts on agricultural development schemes to help Transkei break the vicious cycle of poverty has become a matter of great concern".

Generation of farm income through efficient agricultural production provides the real productivity base from which all other objectives can be discussed. Knowing which crops to grow, which new crop technologies, which farm size, which rural infrastructure investments, and which production techniques will generate that efficient agricultural productivity is partly the responsibility of farmers who typically make rational decisions within the constraints of their own households and resource environment and

it is also the main responsibility of the policy makers (Eicher and Staatz, 1984).

Agriculture is not only essential from the point of view of feeding the population, but for other important reasons as well. It is by the wide exploitation of their natural resources, land in particular, that countries earn the money required to pay for the developments needed to attain and maintain higher standards of living. Agriculture is the foundation on which industrial development must be based as it supplies much of the raw materials for such industries. According to Lele (1957), improving the living standards of the subsistence rural sector is important, not only as a holding operation until industrialisation can advance sufficiently to absorb the rural exodus, but frequently as the only logical way for stimulating overall development.

The Transkei region is situated in the eastern part of South Africa, where the production potential is high (Tyack 1976). The annual rainfall varies from 1 200 mm along the coast to 660 mm in the South and 880 mm in the North, which is much higher than the average for Southern Africa (Van Rensburg 1976).

Agriculture is the most important and crucial industry in Transkei and can be expected to remain so for many years to come (Wood & Van Schoor, 1976). For Agricultural development to take place, there must be a favourable social climate (Burger, 1975). It is therefore, obvious that the social climate and agricultural support activities such as access to credit, production loans, favourable tenure system, availability of markets, farmer resource centres and many more production factors could play a vital role in agricultural

productivity of Transkei. The availability or scarcity of these production factors, need to be diagnosed if they are playing a vital role or not in the agricultural development of Black farmers in the Transkei.

The findings of Bembridge (1982) also reveal that Transkei has a high potential for intensive Agriculture due to a favourable climate. Although availability of suitable soils limits the potential for cropping to some extent, it has an excellent potential for livestock production. Agricultural production, which is the corner stone of Transkei economy, shows a declining situation of food productivity per head (Bembridge, 1982).

There are various interrelated reasons for this kind of performance, all rooted in a lifestyle and set of customs fashioned over many centuries and it stands to reason that low productivity and poverty is aggravated by various factors:

- The traditional system of land tenure and the community's attitude to agriculture is not yet looked upon as a possible source of income, rather it is a way of life and the final resource on which the majority of the labour force falls back into if their efforts fail elsewhere.

- Lack of adequate services and infrastructure such as access roads, irrigation water, energy sources, means of communication and commercial services.

- The lack of training in suitable agricultural methods of production and technology, and thus the lack of knowledge on how to make optimal use of the available land and other resources.

- The inability of the rural farming sector to acquire appropriate production resources such as farming equipment.

- Lack of access to credit and financial subsidies or production loans.

- The small farms and non-viability of agricultural holdings.
(Broehl, 1982; Erskine, 1984; Nicholson, 1986; Bembridge, 1986).

In spite of all the constraints confronting the Black farmer in the rural areas, a few households, estimated at 0.2 % of total rural households, have achieved market orientated commercial production and thus offer some hope for the future (Bembridge, 1987). Despite the circumstances as revealed above, the Transkei region can still produce relatively enough to meet the requirements of its own population if the limitations and these challenges are faced squarely. Five ways of becoming a commercial farmer exist in the Transkei Region; one is to buy one of the farms which are rarely available to farmers and are also expensive, another way is by being part of the then government irrigation schemes, the third one consists of farmers who are on a leased state land, another category consists of individuals who are farming on land allocated by the chief and endorsed by the magistrate and the last category consist of a group of farmers who are allocated a piece of communal land for a specific project. Usually such land is recommended by the extension officer or requested by that particular group from the chief via the magistrate.

1.2 MOTIVATION FOR THE STUDY.

In his policy speech of 1976, the former Transkei Prime Minister, Paramount Chief K.D. Matanzima said " The wealth of the Transkei lies in Agriculture but this wealth must be exploited and we can not allow it to be dormant forever" (Champion, 1976).
Transkei is known as the potential pantry of South Africa because of its favourable climate for the growth of crops like maize, wheat and sorghum, nevertheless, it is not producing enough to feed its population of 3,5 million.

The agriculture potential of Transkei is high and it is clear that agricultural production is not limited by environmental factors but, also, by certain socio-psychological factors embedded in the culture and customs of the people. Seobi (1980) states that the most compelling factor is the need for a new development strategy in the nature of the human element in backward nations and that agricultural production depends upon a multiplicity of factors centred around the environment and the people.

The current rate of output from the farming community in the Transkei is far below the levels that could meet the food security expectations of its population. For example, the maize yields were estimated at an average of 0.25 to 0.30 tons per ha on a total planted area of about 470 000 ha, and at about 2.5 tons per ha at TRACOR Schemes and intensive production areas which together constituted about 28 000 ha, with a total annual production of about 200 000 tons. The total compared with the annual demand of almost 700 000 tons, by 1990, meant that an estimated 500 000

tons per annum had to be imported (Kula & Nkonki Consortium, 1995).

Transkei Agriculture has experienced a lot of interventions over the past decades, with very few examples of success. These interventions have varied from betterment schemes, introduction of large centrally managed state irrigation schemes, parastatal projects, smaller farmer settlement schemes, community gardens and the present leasehold system of farms which were formerly owned by white farmers. In spite of all these efforts, it is still of importance to note that the rural farmers still depend on income from outside the agricultural sector. According to Kirsten and Van Zyl (undated), it is recognised that subsistence agriculture plays a vital role in the entitlement package of rural households and is considered more of an emergency backup than a reliable source of income.

As pointed out by Bembridge (1987), before any possible considerations can be given to the development of small-scale agriculture and the means to bring this about, knowledge of what farmers are doing must be available, what factors govern their actions, and what pressures are there to change agricultural production.

The major motivation of this study is to provide an understanding of the characteristics of farmers pertaining to, physical resources, human resources, economic activities, institutional factors, challenges and possible interrelationships associated with commercial farming as an aid to addressing agricultural development in the Transkei region of the Eastern Cape.

1.3 STATEMENT OF THE PROBLEM

The agricultural potential of the Transkei region is beyond dispute but this potential remains unexploited. The region does not produce enough food to feed its population. To support this concept, Kula & Nkonki (1995) indicated that the Transkei region is relatively well endowed with natural resources that favour agriculture and revealed the following figures in their study namely; that 300 000 ha is good for forestry land, 60 000 ha is suitable for planting crops, 300 000 ha is suitable for dry-land cropping, 25 000 ha potential irrigable land and 3 500 000 ha is grazing land (capable of supporting more than 1 million LSU with pastures).

Except for livestock, none of the other agricultural activities have utilised 60% of the existing potential. In fact, about half of the maize consumed each year is imported from the former Republic of South Africa (Van Rensburg 1976).

Agricultural development in the Transkei region has not progressed to a point where it can be considered self sufficient in food production. Since very little is known about commercially oriented enterprises in the Transkei, the influence of various factors of production and under utilisation of existing resources which contribute to the low levels of production, there is a need for detailed research in this region to unearth some of these aspects.

The main problem statement is that farmers in the Transkei are not utilising the full potential of the land. The research question addressed is, to what extent are the characteristics and challenges facing the Transkei farmer with respect to landuse and tenure, micro and macro livestock, crop production and socio-economic

aspects of farmers responsible for the non-productivity and the realisation of the full potential of the land.

1.4. OBJECTIVE OF THE STUDY

The main objective of the study was to analyse the characteristics and constraints to smallholder commercial farmers in the Transkei region of the Eastern Cape province of South Africa.

The specific objectives of the study were as follows:

1. To identify the household characteristics of the smallholder commercial farmers in the Transkei region of the Eastern Cape.

2. To identify the landuse and the land tenure patterns as affecting the Transkei smallholder commercial farmer.

3. To assess existing agricultural practices of smallholder commercial farmers.

4. To identify the constraints to smallholder commercial farming, as perceived by the farmers and landowners.

5. To examine the small scale commercial farmer's perceptions of their farming skills and farming performance.

6. To compare the Transkei commercial farmers with other farmers elsewhere in South Africa using secondary data.

1.5 SIGNIFICANCE OF THE STUDY

The unfolding of the socio-political events during the 1990s carried in its wings a re-thinking of many aspects of delivery services to farmers, especially the rural poor and disenfranchised farmers. A meaningful role is foreseen in forging public-private sector partnerships in servicing the land reform programme and developing agriculture in a new dispensation that focuses on efficiency of delivery services (Botha and Stillwell, 1997).

The findings of the study should inform decisions concerning how extension strategies may be improved to enable small and large-scale commercial farmers to adopt improved farming practices.

The study will also provide information on the energy and power needs of the farmers to improve their daily farming operations. It will diagnose constraints that are faced by small scale commercial farmers and those factors, which inhibit effective agricultural productivity. The study should also be useful to the Eastern Cape Provincial Department of Agriculture in defining the training needs of small holder commercial farmers in the Transkei region of the Eastern Cape.

1.6 LIMITATIONS

Although an attempt was made to contact all commercial farmers in the twenty-eight magisterial districts of the former Transkei through district agriculture offices and farmers unions, organising farmers in all the districts of Transkei has been limited by poor telecommunication in most areas and the possible lack of co-operation from the contacts. In some districts, farmers indicated clearly that they have been over researched and they were just not prepared to co-operate. This also limited the site selection criteria that was used.

The poor condition of access roads to the farms has to a greater extent limited the researcher from reaching most places. The study was therefore, limited to those commercial farmers who co-operated and were willing to be interviewed within the chosen districts.

The time factor was another major limitation because the researcher was expected to cover almost all the districts of Transkei. The timing of the study coincided with the rainy season and as a result of the rains, most of the roads were impassable and thus resulted in a lot of delays in the process.

The study concentrated on individuals and groups of commercial farmers who were identified with the help of district agricultural technicians. The commercial farmer in this context is seen as a person engaged in farming as a business.

1.7 ASSUMPTIONS OF THE STUDY

The study was directed by the assumption that commercial farmers are present in all rural communities and are characterised by certain traits which differentiate them from the rest of the subsistence farming community.

The study was also directed by the stereotype that black farmers in most African countries are traditional and would remain at a subsistence level.

The third assumption was based on the fact that access to services, availability of productive land and the level of farming skills are necessary for commercial production.

Finally, for the purpose of this study, it was assumed that commercial farmers are those persons who have a commercial orientation towards farming and who produce at least some of their requirements from the land and may sell or barter any excess produce.

1.8 DEFINITION OF TERMS

A. COMMERCIAL FARMER

A farmer who is engaged in any form of farming as a business without any emphasis on the land size, and has full access to functions of production, goods and services so that he/she can farm effectively

B. SMALL SCALE COMMERCIAL FARMER

A small-scale farmer who is engaged in farming for the purposes of selling his or her surplus. Some resources, both physical and human may be limited to an extent.

C. SUBSISTENCE FARMER

A farmer who has various access constraints such as land, input supplies and ploughing services and are basically operating on communal land

D. SMALLHOLDER FARMER

A farmer who is operating on communal land and is constrained by a bundle of physical resources, production resources, technology, and markets for inputs and outputs.

E. TRAINING NEED

The understanding, knowledge and skills required for the performance of farming activities.

F. AGRELEK

A sub-department of Eskom which provides advice on farming activities, electricity and technology to farmers.

CHAPTER 2

REVIEW OF RELATED LITERATURE

2.1. INTRODUCTION

Because of the peculiar characteristic of the South African farming situation, a classification of farmers into three main production categories was made by Van Zyl *et al*, (1991). The first group is commercial farmers operating in the market economy and secondly, there are so-called emerging farmers, who cannot function in the market economy because of restrictions in the environment. The third category is subsistence farmers farming on subsistence or even below subsistence level.

Agriculture is the main component of the economic sector of low income countries such as in Africa (Arnon, 1981). Most of these farmers in these less developed countries, are orientated largely (not necessarily entirely) to subsistence production, notwithstanding the tremendous advances in agricultural technology made elsewhere in the world during the course of the twentieth century (Nicholson, 1989)

A subsistence economy is one in which a producer is not characterised by commercialisation (Rogers and Svenning, 1969). According to Nicholson (1989), a subsistence farmer barely produces enough for the family's basic requirements and a small surplus may be sold or battered in order to purchase necessities that the farm cannot produce, or to obtain cash for taxes,

repayment of debts and certain social obligations such as festivities and dowries.

This surplus production is dependent on favourable conduits such as climate and soil fertility. Subsistence agriculture is traditional in the constancy of methods of production used and of the commodities produced (Arnon, 1981)

It is therefore clear that the emphasis on agricultural development should be directed at rural people through concerted rural and agricultural development efforts in the most cost-effective manner. According to Van Zyl *et al* (1994), rural and agricultural development has three basic aims:

- to improve the income levels of rural people in order to provide them with their basic needs and satisfy expectations for improved living standards;
- to increase the agricultural production of each area commensurate with the potential of available land and water resources; and
- to conserve, maintain and improve the natural resources of soil, vegetation and water through sound land-use practice.

These aims are, however, extremely difficult to achieve in the developing areas of Southern Africa taking into account the present situation of poverty, various institutional constraints, lack of infrastructural development and many other problems associated with a subsistence economy, Nicholson (1989).

The attitude of any farmer towards the adoption of innovations would be challenged by his direct involvement in the process of improving agricultural productivity. Active participation by farmers

creates several advantages in generating workable and economically feasible solutions to farm problems.

In spite of these constraints to agricultural development in developing areas of Southern Africa, progressive commercial farm operators are present, and, as observed by Tapson (1984), there is no evidence of a lack of entrepreneurial spirit in the homelands. However, there is little opportunity to develop and the lack of resources is restrictive.

Meindertsma (1994) indicated that farmers are no fools and that they are quick to see through superficiality and detect when scientists are missing the point or promoting ill conceived technologies.

2.1.1 FARMER TYPOLOGIES

The small scale and large-scale commercial farmers in the former Transkei are faced with several factors that characterise them and constrain increased productivity. There have been many attempts to classify farmers. According to Botha and Stillwell (1997), the first level of classification is to classify the client base as household food security producers and commercial farmers.

- Household food security producers are those rural and urban poor producing for their own consumption as a means of keeping body and soul together.
- Commercial farmers are surplus producers producing for the market or those that employ labour to produce while household food security producers will use family labour.

Further distinction is made between commercial farmers

- those farmers, that have full access to farmer support services (full commercial farmers),
- those that are struggling to gain access to comprehensive farmer support services and also limited by certain resources(emerging commercial farmers)

Botha and Stillwell (1997) indicated that a farmer type should not be seen as fixed but farmers would evolve from one type to another as their farming system evolves and becomes more modernised. Thus, many household food security producers will become emerging commercial farmers if access to comprehensive farmer support services is available.

2.1.1.1 The small scale farmer

South Africa has a dual agricultural economy, a well developed commercial sector as well as a predominantly subsistence orientated sector in the traditionally settled rural areas (Business and Economy-Internet extract). The small scale sector or subsistence farming has been exposed to several constraints, which have made them to produce under unfavourable conditions. The small-scale farmer and his family find themselves in the rural areas of South Africa which can be very remote without efficient infrastructure and deprived of communication system such as the telephone. In contrast to his counterpart, the commercial farmer; the small-scale farmer and his family are usually illiterate to semi-literate (Burger,1995).

2.1.1.2 Small scale farmer constraints to farming

The Harare meeting of agricultural experts held at Mandel Training Centre in 1997 reviewed some of the constraints that are confronting the small holder farmer. They came up with the following points of concern;

Technology – much of technology of the small-holders is inadequate, largely because research priorities are not informed by the problems on the ground. This is compounded by poor technology transfer due to limited access to production assets (machinery, capital, seeds etc), poor information transfer, and the uncoordinated efforts of differing agencies.

Land- at present levels of productivity, land is a serious constraint on small-holder agriculture. Too many farmers are attempting to make a living on land that is degraded, of poor fertility, and where land tenure policies work against investments in agriculture.

Water- small-holder farmers depend on erratic rain-fed agriculture, and therefore are severely affected by water shortages. Water development is therefore important to support various aspects of farming, including irrigation and aquaculture.

Institutional support-small holders are typically served by ineffective support institutions which do not understand, or take seriously, the critical role of a vigorous small-holder sector in development. This results in an institutional framework unfriendly to small-holders. Public sector agricultural support institutions have limited experience with small-holder agriculture, inadequately trained

professionals, poor financial and human resources, and are backed up by limited research capacity in universities.

Conceptual attitudes of both farmers and development agencies- some small holders show lack of entrepreneurship, and do not regard farming as a business. They fail to use group power in getting resources and infrastructure. Development agencies show absence of management skills and often assume that small holders are inefficient and that smallholder agriculture means inevitable social and economic decline.

Credit, marketing, infrastructure, and trade-small holders are seriously constrained by lack of access to capital. However, rural credit policies fail to use lessons from other countries and circumstances, and this results in small holders being denied access to useful sources of credit. Many small holders have been actively excluded from important markets, from access to trade information, and live in areas of poor infrastructure. The neglect-or, in many cases- obstruction to the infrastructural and institutional needs of small holders need urgent attention.

According to Bembridge (1986), in the less developed areas of Southern Africa none of the institutional supporting services, such as an operational agricultural development policy, suitable land tenure arrangements, marketing and pricing policy, credit and farming inputs, as well as research and extension services, which are considered essential for agricultural development, have been adequately fulfilled.

Small scale-farmers also generally lack functional local and higher level organisations in terms of providing leadership and a vehicle to

participate in agricultural development and be able to exert political influence.

He concludes by saying that all small-scale farmers operate at a disadvantage in terms of lack of institutional support, operational policies, credit, marketing, farm inputs, land reform and suitable technology. Because of a lack of land and other resources even the more progressive farmers are unable to make a living out of agriculture. In the absence of any land reform programme, it appears that small scale-farming in the less developed areas can only be developed as a part time occupation to supplement outside income.

Because of the particular characteristics of the South African farming situation, Van Zyl, Vink and Van Rooyen (1991) made a classification of farmers into three main production categories. The first group is commercial farmers operating in the market economy and secondly there are the so-called emerging farmers, who cannot function in the market economy because of restrictions in the environment. The third category is subsistence farmers farming on a subsistence or even below subsistence level who produce surpluses by coincidence.

In countries, like South Africa, where markets facing small scale farmers for any combination of labour, land, credit, land rental, insurance *etc.*, are often imperfect or missing (at least for some farmers, in general those who are small), this may give rise to real economies of scale over the short term. Hence whereas the small scale farming strategy holds considerable promise from an efficiency perspective, this does not mean that its implementation is easy or can afford to ignore critical policy issues such as

resolving the usually constrained access of small farmers to credit markets (Van Zyl, 1995).

2.1.1.3 The educational and training needs of the farmer

Apart from an ability with regard to the basic generic skills, the small-scale farmer also needs the know-how to create wealth from economical forces in the rural world of work. To become an entrepreneur with parameters which determine the scope of an enterprise in rural situations, the smallholder farmer must be familiarised with the principles of business, economics, record keeping and should become proficient in managerial skills. To plan and control his agricultural related enterprise, he/she needs to be enlightened about veld management, soil fertility. Animal nutrition, breeding and selection principles of commercial farming by the manipulation of natural resources-soil and water-as primary economical forces in rural South Africa, the small scale farmer needs a minimum degree of vocational education (Burger, 1995).

According to Gordon (1992) rural education has been viewed in the past as education for emancipation. Education programmes were designed to equip rural young people with skills and attitudes to leave rural communities. But with the decline of ready employment opportunities in larger urban areas, rural people nowadays seek education for their empowerment. According to Gordon there is a need for a comprehensive rural development programme where "education provision works with other programmes to uplift the community".

Gebeda (1992) identified inter alia the following training needs of an emerging farmer: communication training to enable the farmer

to be equipped for the assimilation of new innovations, technical training appropriate to the technical fields pertaining to is business of activities, financial management training on budgeting, production costs, marketing and the determination of gross margins and conservation training for the farmer to be familiarised with the concept of optimum utilisation of natural resources for agricultural production.

The Department of Education's manual on adult education (1994) revealed that Bookkeeping, Business Economics, Agricultural Economics, Tractor Mechanics, Applied Agriculture, Animal Husbandry, and Field Husbandry are the most relevant to the educational needs of the small scale farmer.

In a document on adult education, the department of education (1995) stated that although adults lack certain skills, these skills should be based on accountable education. Education therefore is the primary requisite for economic development. The document goes on to say that any training which takes place in an uncoordinated way and does not take basic education into account, must be incomplete, ineffective and unaccountable. Education and training, according to the document, must therefore go hand in hand with education being the primary motivator and initiator, and, in consultation with all stakeholders, laying the base by providing the curriculum, setting standards, supplying expertise and being responsible for certification.

2.1.1.4 Marketing environment of small scale farmers

An important feature of agriculture in the homelands is the extent to which households are involved in the market, whether for the disposal of surplus, or in order to make up for food deficits. In general the yields from the small farm plots in the homelands are poor, and very little of the production, (The World Bank Southern Africa Department, 1994).

According to Madikizela (1997), the information on marketing is often patchy and unreliable in black farming areas. The World Bank Southern Africa 1994, says that by contrast with commercial farming areas, roads are often poor, markets are distant, and marketing information is scanty and that within the homelands the poor road system leads to isolated markets and the development of monopolistic and monopsonistic (monotonous) marketing conditions. There is very little information on market demand and market requirements outside the local area.

According to Nkosi (1994), it is difficult to define the structure of agricultural marketing systems in developing areas. Fe'nyes (1982) categorises agricultural marketing in developing areas into private, co-operative and public managed systems, while Fraser (1991) categorises them into the traditional channels, co-operatives and parastatal marketing organisations.

Due to the marketing constraints that are faced by the rural small-scale farmer, the most dominant market is the rural market where farmers sell directly to the public. Fraser (1991) calls these institutional traditional marketing channels whereas Fe'nyes (1982) regard them as African Markets. Lele (1974) indicated that rural markets are essential as they perform a number of important

functions that cannot be replaced by Government and Co-operative agencies. Rose (1983) views rural markets to include such places as pension payout points, court houses, schools, roads, bus-stops, auction points and stall created along the main roads.

The small-scale farmers operate in an informal type of market and as there are no well-defined strategies used in rural marketing. This is emphasised by the fact that there is a direct and personal relationship between buyers and sellers (Nkosi, 1991).

According to Fraser (1991), the advantages of rural markets are:

- they are capable providing certain services at a lower cost than available alternatives;
- they are not capital intensive;
- they have no reliance on government's rules and regulations; and
- Traders are characterised by a great degree of mobility and flexibly.

The developing countries have been found by Rose (1983) and Nkosi (1994) to have a variety of constraints to marketing and this include more especially the former homelands such as Transkei. They outlined them as follows:

- Lack of formal retail outlets in the proximity of the farmers. Farmers are expected to use outlets which are far away and not relevant to their specific needs.
- Infrastrucural development is poorly developed. A wide range of infrastructure, like storage facilities, communication systems and roads, including the feeder roads in the homelands, is poorly developed. In such situations, roads need not only be maintained, but the road network needs to be extended so that small scale farmer can have access to basic production and marketing requisites.
- There is no clear marketing policy in the developing areas.

- Small-scale farmers market their surpluses through the homestead at local rural market.
- Distribution of food is poorly organised. Many of the municipal fresh produce markets are not designed to meet the needs of the small-scale farmers or the low-income consumers.
- Lack of production and marketing information. Even though there are institutions that provide information to farmers, farmers in developing areas generally lack up to date and relevant market information. This situation, according to Rose (1983), results in farmers having unreliable perceptions of the market of their own produce.
- Communication gaps between the farmers and responsible officers. There are numerous sets of information to be transmitted to the farmers. This task became nobody's job to such an extent that farmers are the principal victims in the end.
- No development of markets or new market outlets. Small-scale farmers are expected to use the same markets as their counterparts. In effect the whole exercise is to the disadvantage of the small-scale farmers, as the structuring of the markets is based to the needs of the commercial farming sector.

2.1.2 THE COMMERCIAL AGRICULTURE SECTOR

The commercial agriculture sector had a long history of ever increasing government intervention, reaching a zenith in approximately 1980 with a horde of laws, ordinances, statutes and regulations. They affected all aspects of the sector, including prices of and/or access to and/or natural resources, finance, capital, labour, local markets, foreign markets, foreign exchange, *etc.* (Kirsten and Van Zyl, 1995). According to the National Department

of Agriculture (www.nda.agric.za/history), the history of African agriculture from the middle of the 19th century to late in the 20th century is one riddled with problems. Gradually African tenants and sharecroppers lost access to land as white proprietors capitalised their holdings. During this period in the Western Cape viticulture was so successful that wine was the most important export product. After the discovery of diamonds and gold in the last quarter of the 19th century there was a need for greater maize production, as maize was the staple food of black mineworkers. A keen demand arose for meat, wheat, wine, tobacco, fruit, vegetables and dairy products. Agricultural development reached the initial stage of commercialised farming. A more settled and stable type of farming replaced that of pioneers (the African farmers).

The agricultural production conditions of the South African commercial sector which is dominated by the white population have been made to be more favourable as a result of the past government policies and interventions.

According to De Lange as cited by de Wet and van Averbeke (1995) the commercial agriculture has been supported by a farmer support system which has served them very well and that overtime, commercial agriculture developed an integrated support system consisting of the following essential components and major participants:

Finance: Commercial banks (Credit worthy farmers)

Land Bank (Medium to long term loans)

Agricultural Credit Board (Farmers with poor credit rating)

294 Co-operatives (Short term production loans)

Inputs: Co-operatives (Probably more than 80% of inputs)
Private sector

Government Institutions (Specialised service e.g. vaccines)

Marketing: 14 Marketing Boards (approximately 85% of agricultural products)
Co-operatives (Usually on behalf of a Marketing Board)
Private sector

Policy: Department of Agriculture
Farmer's Unions
Co-operatives
Commodity organisations
Breed societies

Information: Research Institutions
Department of Agriculture (Agricultural Development Centres)
Extension Services (Mostly private sector)
Media (Government, private sector, farmer organisations)
Consultants (110 firms listed in Effective Farming Directory 1994)
Co-operatives (Mostly subject matter specialist)
Agribusiness (Subject Matter Specialists)

Co-operatives: Agricultural co-operatives play a crucial role in the system that supports commercial farmers. Every farmer is a member of the co-operative. He obtains production credit, information and purchases most of his inputs from the co-op and often he will deliver his product to the co-op. The Land Bank, control boards and agricultural co-operatives created an enabling

environment for the commercial farmer to obtain credit and inputs to be able to produce, and a channel through which to market.

2.1.2.1 Economic significance of the commercial agricultural sector.

Agriculture is a generator of wealth and constitutes one of the key industries in the country's economy. The position of agriculture not only concerns the farmer, urban areas and secondary manufacturing, but because of its inputs and outputs and its function as an empowerment, it has profound impact on the entire economy. According to the National department of Agriculture (www.nda.agric.za/history), the gross income of farmers during 1996 amounted to R37 757 million. Field crops accounted for R12 846 million, horticulture for R8 823 million and livestock products for R16 088. The highest income was realised from poultry and poultry products followed by maize and cattle and cattle calf slaughterings. Exports in 1996 resulted in foreign exchange of R14 118 million. Deciduous fruit, highly in demand in foreign countries, accounted for the largest export value.

According to Sartorius von Bach and Botha (1995), The economic importance, contribution and value of commercial agriculture are normally defined in terms of food production and prices, job creation and linkages with the rest of the economy. The performance of the commercial agricultural sector appears to be rather favourable when seen in pure aggregate terms. In spite of the periodic droughts during the 1980s, South African agriculture still succeeded in producing surpluses. This is confirmed by the self sufficiency index, which indicates that it is self sufficient in all

important staples, vegetables, horticultural and animal products, except beef, mutton, goat, chicken, sunflower and seed oils (Kirsten and van Zyl, 1995). Tables 2.1 and 2.2 summarises one of the sector's roles. Although agriculturally speaking, South Africa is poorly endowed with natural resources, it is self-sufficient concerning most major crops. In the 1980's, South Africa was self sufficient in terms of all important field crop products (except rice) and horticultural products (except coffee, tea, cocoa and spices), therefore achieving self-sufficiency indices of 134 for field crops and 152 for horticultural crops are available for exports. Animal products show a self sufficiency index of less than 100, implying moderate imports of mainly red meat and industrial milk products. Since 1984 South Africa has experienced a strong growth in agricultural exports and an analysis of trade performance reveals a substantial surplus on the agricultural balance of payments, with export growing at a faster rate than imports. South Africa is one of only seven countries in the world which are net exporters of agricultural products. The average growth rates in the consumption of field crops and horticultural products for the period 1981 to 1991 have exceeded the growth rate of the population (National Department of Agriculture).

Table 2.1 Average production and consumption of selected Agricultural Commodities in South Africa, 1985-1990

Commodity	Imports	Exports	Production	Consumption		SSI***
				Total*	Human**	
	(1 000 ton)					
Wheat	94	449	2 612	2 262	1 119	115,5
Maize (white & yellow)	484	1 689	7 422	6 127	2 615	121,1
Potatoes	5	8	1 042	1 039	872	100,3
Vegetables	4	27	1 739	1 717	1 545	101,3
Sugar	63	863	2 044	1 258	1 258	162,5
Beef	81	16	579	644	639	89,9
Mutton, goats meat and lamb	14	1	182	195	193	93,3
Pork	1	2	110	109	108	100,9
Chicken	3	0	521	524	519	99.4
Eggs	0	3	181	178	169	101,7
Deciduous & Subtropical fruit	0	466	1,37	897	808	152,3
Dairy products	35	58	2,34	2 321	2 321	101,0
Sunflower seed oil	14	1	84	96	85	87,5
Citrus fruits (fresh & processed	0	426	706	278	278	254,0

* Available for use = Opening stock + Production – Closing stock + Imports – Exports

** Net human consumption = Available for use – Other uses – Losses, and further adjusted for extraction rate

*** SSI (self-sufficiency index) = Total production/Total consumption x 100

Source: Food balance sheets of the Directorate of Agricultural Economic Trends of the Department of Agriculture (as processed) National Department of Agriculture

Table 2.2 Average production and consumption of selected agricultural commodities in South Africa, 1985-1993.

Commodity	Imports	Exports	Production	Consumption		SSI***
				Total*	Human**	
	(1 000 ton)					
Wheat	368	370	2242	2400	1865	100,4
Maize (white & yellow)	515	2 106	8 019	7 012	1 865	114,4
Potatoes	4	11	1 161	1 142	942	101,7
Vegetables	5	27	1 776	1 755	1 580	101,2
Sugar	41	892	1 956	1 107	1 174	176,7
Beef	72	23	618	666	660	92,8
Mutton, goats meat and lamb	17	0	176	193	191	91,2
Pork	2	2	117	117	116	100.0
Chicken	7	2	656	661	654	99,2
Eggs	0	3	199	196	186	101,5
Deciduous & Subtropical fruit	0	511	1 484	974	876	100,0
Fresh milk	0	0	2 435	2 435	1 118	101,0
Dairy products	35	58	2 344	2 321	2 321	101,0
Sunflower seed oil	54	1	121	175	159	69,1
Citrus fruits (fresh & processed	0	435	802	369	366	217,3

* Available for use = Opening stock + Production-Closing stock + Imports-Exports

** Net human consumption + Available for use – Other uses – Losses, and further adjusted for extraction rate

*** SSI (self-sufficiency index) = Total production. Total consumption x 100

Source: Kirsten & van Zyl (1995)

2.2 SOCIO-ECONOMIC CHARACTERISTICS

According to Brinkman, Driver and Blackburn (1979), the operation of a farm involves both human and physical resources. The physical resources are land, capital and other physical inputs such as machinery and buildings. Human resources are labour and management and may be conditioned by personal and behavioural characteristics. The personal characteristics may include level of formal education, age, marital status, sex, attitudes and aspirations.

During the late 1950's and early 1960's, when agriculture was undergoing extensive change, researchers focused on determining what demographic characteristics were of significance in the decision-making process by farmers (Grant, 1988). As revealed by literature about this area, considerable variations of farming success have been noticed due to possible differences in demographic characteristics.

In 1987, Bembridge and Williams conducted a study of farming households in Venda, Kwazulu and Transkei and their findings were as follows:

"Seventy six percent of heads of households were males and twenty four percent were widows. The majority of heads of households (65%) were resident at home, while the remainder was employed outside the projects. Less than half of heads of households (47%) were employed, of whom one third were commuting daily to work. Thirty percent of heads of households were under fifty years of age, 31 percent between fifty and sixty years and thirty nine percent over sixty years of age. While increased age may not seriously

impair managerial ability, health issues aside, it can be concluded that up to forty percent of participation may not have the physical capability of satisfactorily carrying out farming operations and may have to depend on younger family members and others for assistance. On average 6.3 family members were living at home.

Thirty one percent of head of households had received no schooling, while twenty one percent had four or less years of schooling, which suggested that less than half of respondents (48%) were considered likely to be responsive to written communication. At the other end of the scale nineteen percent of respondents had eight or more years of schooling. The same percentage (19%) claimed to be able to read English with difficulty. A lesser percentage (8%) could read Afrikaans reasonably well and sixteen percent with some difficulty. On the other hand fifty six percent claimed they could read their own language and a further thirteen percent could read it to some degree, which suggests that the actual adult illiteracy level (31%) is lower than expected from data on educational levels.

On average, 1.18 persons per family of 6,30 persons were in employment. Due to lack of records it was not possible to assess household income. However, the data on household expenditure showed average monthly expenditure of R298.00 of which R180.00 or sixty percent of expenditure was on food alone. Taking a rural family's requirements for household subsistence adjusted for inflation of R440 per month, R5200 per annum, on this basis it was concluded that seventy nine percent were living below poverty rate datum line in 1987. However, the position is probably considerably better than this if the value of maize production and other home grown food is added to monthly expenditure.

Nevertheless a large proportion of households were living in various states of poverty".

Numerous studies (Dixon, 1982; Kaur and Sharma, 1991; Rivera and Schram, 1987) have highlighted the major role that women play in agriculture of developing countries. Overholt, Anderson, Cloud and Austin (1984) developed a scheme for depicting women's agricultural responsibilities. The five patterns that they describe are listed below:

Under the system of separate crops men and women are responsible for production, processing and marketing of different crops. Women are traditionally identified with subsistence or food crops and men with cash crops.

When there are separate fields, women and men produce the same crops but in identified fields.

With the separate tasks system, much of the work in a cropping cycle is assigned by gender, such as men preparing the ground and women doing planting and weeding.

Under the shared task system, males and females undertake the same tasks on the same crops. This is most prevalent during labour bottlenecks, like weeding and harvesting periods.

Women managed farms include two distinct types – de facto system, where men are away for a period of time and women manage the farm in their absence and de jure situations, resulting from widowed, divorced, abandoned or never married women.

Repassy (1991) emphasises that the more intensive and market-oriented the production is, the more decisive the husband's participation in decision-making and farming strategy.

Kaur and Sharma (1991), in a study of Indian women, reveal that 66% of animal care in India was provided by women. However,

training women in animal husbandry was found to be a totally neglected area in spite of their expressed desire for training related to animal care

2.2.1 Education

Strong claims have been made for education as one of the crucial variables in achieving economic growth, agricultural development and human progress (Wharton, 1963; Dun, 1971). The two effects of education on agricultural output were identified more especially by Huffman (1974) as (i) an allocative effect, enhancing a farmer's ability to acquire, decode and sort market, technical and institutional information at less cost and (ii) a worker effect, enabling a farmer to produce more with a given quantity of resources.

According to Wharton (1963) education pushes back cultural prohibitions, widens the scope for decision-making because it broadens a person's ideas of the "possible", adds new tastes and stimulates motivation. Education increases the farmer's inquisitiveness, which hightens the likelihood of self-discovery of new knowledge concerning the operation of his or her own farm with its unique bundle of resources. It is not accidental that in agriculture the majority of innovations and inventions have come from the farmers themselves. Given the physical and climatic heterogenity which is so characteristic of agriculture, self discovery is an important ingredient in the agricultural growth process (Wharton, 1963).

Nicholson (1989), in his study of Gazankulu farmers in South Africa, found a noticeable difference between successful and

average farmers with regard to levels of formal education. The study indicated that two thirds of successful farmers had successfully completed five years of formal schooling, while only about one quarter of the average farmers had done so. He contends that if completion of five formal schooling years is regarded as being the basic requirements for literacy and numeracy, then it is apparent that most of the successful farmers were literate, while most of the average farmers were not. It was also found out that almost two-thirds of the average farmers as compared to one-quarter of the successful farmers had received no schooling at all.

Bembridge and Williams (1990), in their study on small-scale corn producers' adoption practices in Ciskei, South Africa, found that less than half (48%) of respondents were considered likely to be responsive to written communication because of a lack of formal education.

An investigation done by the HSRC (1991) has found that there is a relative high percentage of illiterates in rural South Africa. The investigation has also found that this illiteracy has a negative effect on the rural communities to be trained, as well as curtailing, their upward mobility in the occupational hierarchy.

2.2.2 Age

Brinkman et al, (1979) concluded that as farmers get older they often become more conservative and reluctant to accept risk, work fewer hours and have fewer non-farm employment opportunities. Rogers (1961) argues that innovators and early adopters are more likely to be younger than other farmers. Nicholson (1989) agrees that age may be a contributing factor influencing success in farming, because younger people may be more adaptable and therefore more willing than older people to try out new methods. Williams and Bembridge (1990), in a study of the Training and Visit Extension in Keiskamahoek, found that nearly 60% of the contact farmers were over the age of sixty years, while less than 10% were under the age of forty. It was therefore difficult to change the fixed habits and attitudes of such farmers. They also argued that even if their attitudes could be successfully changed, they only have a limited lifespan in which to influence other farmers. Taylor (1962) in a study of successful and unsuccessful farm families in Alabama, found that the younger farmers and the older farmers make less gross income than do middle aged farmers, those 40 to 60 years of age.

2.3 THE AGRO-ECOLOGICAL SETTING

The Transkei sub-region has good agricultural potential, and offers sufficient diversity of soil and climate to permit a variety of different forms of agriculture. This section delineates the basic agricultural and basic conditions in the sub-region, as an introduction to a more systematic consideration of matters pertaining to land and agriculture in the sub-region. In order to

understand the distribution and nature of the natural resources of soil, water and vegetation in Transkei it is necessary to appreciate that all of them are determined largely by climate and by the related factor of physiography.

2.3.1 Topography

The Transkei region can be subdivided into three main topographic entities, namely the coastal lowland plateau, the central midland plateau and the highland plateau.

The coastal plateau is about 300 to 500 m above sea level. In its geological history, this area was subject to lift which has caused renewed incision by the many rivers and streams Transkei dissecting it. As a result, much of the land on the coastal plateau slopes steeply. Major portions of all coastal districts lie within this topographic entity. A scarp separates the coastal lowland plateau from the central midland plateau, which has an altitude ranging from 700 to 1000 m above sea level. Generally, the topography of the midland plateau can be described as undulating, but several major rivers have cut deep, steeply sided valleys into the landscape. The midland plateau covers more than half of the Transkei region. A second scarp separates the central midland plateau from the highland plateau which lies between 1500 and 1800m. The highland plateau forms a narrow fringe under the peaks of the Drakensberg Mountains.

2.3.2 Geology and soil types

Transkei falls within a major geological area referred to as the Karoo Basin and the rocks that are found form part of the Karoo sequence. The following description of the geological history of the Basin is largely based on the text by Rust (1988).

" Structurally, the Karoo Basin was a large subsidence (gradually sinking) area which over a period of millions of years got filled with sediments. These sediments have a combined thickness of several thousand metres. The base of the Karoo Basin consists of Dwyka tillites, a dense dark blue rock produced by the action of glaciers. The retreat of the ice sheet left a large lake, which was gradually filled by sediments consisting of clays, muds and sands. These lacustrine (lake) deposits are referred to as the Ecca Group sediments. Once the lake was filled, deposition was mainly in river channels, flood plains and swamps. These deposits consist mainly of irregularly distributed mud and sandstones, and they form part of the Beaufort Group of sediments. Uplift of the highlands south of the Basin caused their erosion and gave rise to the deposition of coarse sandstones in the Basin. These deposits are referred to as the Molteno Formation. Subsequent drying of the basin resulted in the deposition reddish siltstones, mudstones and fine-grained sandstones of the Elliot formation, and deposits of the Clarens formation consisting of fine-grained cream coloured sandstones deposited in playa lakes and large dune fields.

A huge volcanic eruption occurred some 190 million years ago and terminated the sedimentary history of the Karoo basin. Basalts of the Drakensberg formation were deposited on top of the sediments which were also intruded by magma injections. Remnants of the basalts still cover the Drakensberg mountain peaks. Erosion

removed the basalts in other parts of the Karoo basin but exposed the magma injections. These now occur as dolerite dykes and sills throughout the landscape, because of their resistance to weathering and erosion. From an agricultural perspective, the geology of Transkei can be summarised as consisting of islands of dolerite rock within a sea of different types of clastic sedimentary rocks."

There is no comprehensive data base covering the soils of Transkei. This void in the knowledge of South African natural resources has been recognised, and in 1998 the Agricultural Research Council was commissioned to conduct a land type survey of the Transkei region. This survey, which will take several years to complete, will provide the necessary soils information to enable regional resource assessment and planning.

Because most of Transkei enjoys a fairly wet climate its surface soils are usually acid and tend to have a low base saturation. However, the occurrence of subsoil acidity is unusual. ARDRI experiments in Xhora district showed that lime applications can greatly improve the fertility status and productivity of the local soils (Benians, G[1]. pers. Comm).

The soils on the coastal lowland plateau are usually shallow, because the steep slopes do not favour accumulation of soil.

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1 Guy Benians was a soil fertility expert and lecturer attached to the Department of Soil Science at the University of Fort Hare. He conducted five field-scale farmer-managed lime/fertiliser experiments in Xhora district under the auspices of the Lima Project (ARDRI, 1989). His recommendations were based on the chemical analysis of selected farmer soils, which showed high levels of surface soil acidity and low phosphorus availability. The recommended lime/fertiliser applications resulted in a maize grain yield of 5 tons per ha or more on all fields.

In places where dolerite crops out and the slope of the land is gentle, deep red clayey soils can occur.

High rainfall and warm temperatures have caused intense weathering and leaching of the surface soils and acidity is the rule. The leached status of the soils appears to have a positive effect on their resistance to erosion, and local farmers often practise cultivation on slopes that exceed 20% (ARDRI, 1989).

In the northern parts of the central midland and highland plateaus well drained yellow-brown and red soils are dominant, Clovelly and Hutton type soils being most common. Red soils (Hutton type) are usually associated with the presence of dolerite and the yellow-brown soils (Clovelly type) occur on sedimentary rocks. In the southern parts

where rainfall is less abundant, soils with an argillic horizon (soils where the clay content increases with depth resulting from the downward movement of clay particles) are most common and surface soil acidity is less pronounced. Shallow litholic soils cover the steep valley slopes and hydromorphic soils (soils affected by water logging) are commonly found on concave footslopes (Van Averbeke and De Lange, 1995). Generally, the main physical limitation of soils in Transkei is shallow rooting depth and associated low water holding capacity. The main chemical limitations are acidity, low base status and low phosphorus content (van Averbeke and De Lange, 1995). It is believed that addressing the chemical limitations of Transkei soils would bring about a major increase in their productivity

2.3.3. Climate

A relatively high rainfall is one of the assets of Transkei. Average rainfall is relatively high throughout Transkei. The annual rainfall ranges from 750 mm to 1400 mm over the coastal plain and between 500 mm and 1250 mm over the interior and the mountain areas. The long term annual precipitation for Transkei is 815 mm. The highest rainfall occurs during summer (van Rensburg, 1976).

Climatically, Transkei is the most humid region in the Eastern Cape Province. Except for the western part of the region, has a mean annual rainfall that exceeds 600 mm. The coastal zone is the most humid part and nearly all of the area receives a mean of more than 1000 mm per annum. Transkei forms part of the summer rainfall region but the coastal districts do receive some rain in winter (van Averbeke and De Lange, 1995). According to van Rensburg (1976) 92% of Transkei receives sufficient rain to sustain fairly risk-free rainfed production of summer crops. The distribution of temperature regimes in Transkei is closely linked to distance to the sea and altitude. Along the coast the climate is subtropical and temperature differences between summer and winter are relatively small. The interior has hot summers and cold winter, and seasonal differences in temperature increase with distance to the sea. The duration of the frost period, an important factor determining the growing season of frost-sensitive plants and crops, increases from zero near the coast to 180 days on the highland plateau and Drakensberg mountains. Where the duration of frost exceeds 150 days, the duration of the growing season for summer crops is limited. Timely onset of the summer rains is essential for

successful cropping in this zone, because planting cannot be delayed for too long. Where the duration of the frost period is less than 90 days farmers are able to delay planting to January if early summer rains have fail to occur. (van Averbeke and De Lange, 1995). Hail storms can destroy entire stands of crops. The incidence of hail has a similar distribution as the duration of the frost period, increasing with distance to the sea and altitude. It ranges from zero days per year at the coast to six days per year in the Drakensberg mountains (van Averbeke and De Lange, 1995).

Annual potential evapotranspiration in Transkei does not vary much, ranging from about 1500 mm at the coast to 1750 mm in the dry western parts of the midland plateau (van Averbeke and De Lange, 1995).

2.3.4. Water resources

According to Kula and Nkonki, (1995), Transkei has impressive surface water resources in the form of the major and internal river systems, among which can be mentioned the following:

- Telle
- Orange
- Umtata
- Umtentu
- Qora
- Kei
- Bashe
- Umzimvubu
- Umtamvuna
- Umzimkhulu

Transkei is drained by a multitude of rivers and streams. Some of the runoff water is harnessed in catchment dams. Important dams include the Ncora Dam on the Tsomo river with a capacity of 181 Mm^3, The Lubisi Dam on the Indwe river with a capacity of 158 Mm^3, the Xonxa Dam on the White Kei river with a capacity of 158 Mm^3 and the Umtata Dam on the Mtata river with a capacity of 261 Mm^3. All other dams in Transkei are small and have a capacity less than 25 Mm^3 (Transkei Land Reform Research Group, 1995). It is generally agreed that the water resources in Transkei are under-utilised and that most of the water runs into the sea without being harnessed. Especially lacking are small dams which could improve access to domestic water and support small scale farming enterprises.

2.3.5. Vegetation

The vegetation on the coastal plateau consists of Dune Thicket near the sea and Coastal Mixed- or Sour Grassveld in the coastal hinterland. Valley Bushveld is found on the steep slopes of the major river valleys. The central midland plateau supports Dohne Sourveld and the highland plateau has a cover of Highland Sourveld and Afromontane Forest. *Themeda festuca* Alpine Veld is found on the southern parts of the Drakensberg mountains (Acocks, 1970).

Because of the temperate humid climate, natural vegetation varies from open grassy planes on the high lying interior plateau to dense forest growth along the coast and larger valleys. In those areas where the natural vegetative cover has not been disturbed, vegetation stabilises to a climax of dense forest or tall grasses. Except for change due to mean annual rainfall and overgrazing, the vegetation of the area remains constant, Acocks (1988). He further argues that southwards, thornveld has replaced a good deal of the forest and is actively replacing the grassveld which resulted from the destruction of the more temperate forest and scrub forest of the Eastern Cape, as well as much of the Dry *Cymbopogon-Themeda* Veld, e.g. in the Queenstown area. The Karroid bushveld is shrinking in area, being replaced by Karoo and Karroid Broken Veld. Bushveld and thornveld are being invaded by Karoo and in Griqualand West by desert trees and shrubs, notably *Acacia melifera* subspecies *detinens* which tend to form thickets and spoil the open, grassy nature of the veld, reducing its grazing value.

Generally, the vegetation cover of Transkei is among the densest in South Africa and, where it has not been destroyed, secures good protection for the soil. The veld types have an amazing ability to recover. Some climax grasses still occur even in areas that have been subjected to high stocking rates for decades (van Rensburg 1976).

2.4. AGRICULTURAL POTENTIAL OF TRANSKEI

The Agricultural potential of the area is indisputably high. In terms of climate, soils, vegetation, and other agro-ecological factors, Transkei has a high and diversified agricultural potential, about 46% of the area is suitable for intensive crop and livestock production, with 16% of the lower rainfall areas suitable for semi-extensive livestock production supported by drought resistant fodder and grain crops and a fairly high irrigation potential for both large scale and small scale irrigation. It is believed that approximately 80% of Transkei can potentially be used only for grazing, (Development Southern Africa, 1987).

van Rensburg (1976) also confirms the fact that the agricultural potential of Transkei is beyond dispute by revealing that out of the 4.4 million ha area of Transkei, 4,2 million ha is available for farming. Of this area, 383,000 ha is suitable for crop production. Climatic conditions together with rainfall and soils are such that Transkei can grow a remarkable wide variety of crops and produce enough cattle for sale to earn at least 34,5 million dollars a year, to say nothing of sheep and wool.

2.4.1. The role of agriculture in the economy of Transkei

According to the 1991 census Transkei had a *de facto* population of 3 572 652 people resulting in a population density of 81 people per km². Of that total population 3 351 147 (93.8%) were classified as rural (Transkei Land Reform Research Group, 1995). According to Mpambani (1993), the Gross Geographic Product (GGP) of Transkei was 2.92 billion Rand in 1989. Mpambani also reported that in 1990, Transkeian households derived income mainly from remittances (42.3%), salaries and wages (27.3%) and social welfare grants (16.2%), see Table 2.4. Since then, a decline in the relative contribution of remittances is expected to have occurred as a result of retrenchments by mines and other major employers of migrant workers. Evidence of such a trend was presented by van Averbeke *et al.* (1998) for rural Ciskei, who also demonstrated an increase in the relative contribution of social welfare grants over that same period.

According to Mpambani (1993), agriculture accounted for 1.2% of household income in 1990. This is extremely low considering that large numbers of rural households in Transkei practice agriculture. Much of what they produce is consumed by their own household, and under such conditions it is very difficult to obtain accurate estimates of the contribution of agriculture to household income.

Table 2.4 Sources of household income in Transkei (1990)*

Sources of income	Relative contribution (%)
Remittances	42.3
Salaries and wages	27.3
Social welfare grants	16.2
Own business and self employment	3.5
Agriculture	1.2
Others	9.5
Total	**100.0**

- Data from Mpambani (1993)

Antrobus *et al.* (1994) estimated the 1987/88 gross value of agricultural production in Transkei to be worth R373.2 million Rand, about 13% of the GGP of Transkei at that time. Using this estimate the gross value of production was about R110 per person, R660 per household and R90 per ha of agricultural land. Given that the estimated mean annual income per person in Transkei was R962 in 1988 (Transkei Land Reform Research Group, 1995), the gross value of agricultural production was worth about 10 to 12% of the mean annual income per person, about ten times as much as suggested by Mpambani (1993). However, most sources agree that current agricultural exploitation of the available natural resources in Transkei is far below potential, and the need for

improvement in this regard continues to be a major development priority.

Despite its potential, Transkei is a net importer of even the most basic agricultural products. For example, it is well known that maize is by far the most important crop for small farmers in Transkei. According to the Department of Agriculture and Forestry of Transkei (1993), the total area of Transkei allocated to cultivation is 1 139 733 ha (26.1% of the total land area). In 1990 the Department estimated that the 470 000 ha of this land that was planted to maize yielded 200 000 tons of grain or a mean grain yield of 0.425 tons per ha. Climatic conditions were not adverse during that year and yet Transkei had to import an additional 500 000 tons of grain to meet its maize requirements. What are the underlying factors causing this poor state of affairs?

The inhabitants of Transkei are presumed to engage largely in "subsistence agriculture". " Subsistence Agriculture" in this context is used to mean small scale farming with the intention of producing enough to feed the household for the current season (LAPC, 1995). Case studies in sleeted areas of Transkei and Ciskei estimate that agriculture contributed only 6% to disposable income with the balance coming from pensions, wage income and other remittances (Bembridge 1987). Some researchers have shown that the contribution of agriculture to the subsistence of rural blacks had declined from 51% in the 1950s to only 20% in 1984 (de Wet and van Averbeke, 1995). Thus, viewed in the light of the small contribution of agriculture to household income, farming, and particularly market oriented agricultural production, is not seen by communities as a viable alternative to off-farm income generating activities (de Wet and van Averbeke, 1995). It has been reported in various other studies of rural agriculture that it does not sustain

the households because of low productivity. As a result, the households are increasingly dependent on the market to obtain the staple food. With the very low incomes in the region and diminishing remittances from migrants, many households cannot afford the basic food requirements to sustain good health (LAPC, 1995).

2.4.2. Physical factors determining agricultural potential

In terms of climate, soils, vegetation, and other agro-ecological factors, Transkei has a high and diversified agricultural potential. About 46% of the region is suitable for intensive rainfed crop and livestock production. Another 16%, in the western lower rainfall areas, is suitable for semi-extensive livestock production supported by drought resistant fodder and grain crops and has a fairly high irrigation potential for both large scale and small-scale irrigation. Generally, relatively steep slopes in much of Transkei causes land suitable for cultivation to be localised and limited in area. These conditions favour mixed farming involving both crop and animal production, because such systems allow for appropriate exploitation of the landscape diversity.

The Transkei Land Reform Research Group (1995) estimated the areas covered by the major land use categories in Transkei and found about 175 000 ha was planted to forest, consisting of about 75 000 ha of commercial plantations and woodlots and 100 000 ha of indigenous forest; about 1 000 000 ha of land for cultivation, 300 000 ha of residential land and about 2 890 000 ha of rangeland. Some authors have suggested that up to 36% (1,5 million ha) of land in Transkei is suitable for afforestation and that 210 000 ha of this land is considered highly suitable (Crickmay

and Assoc., 1993). Considering agricultural use of land, the Development Bank of Southern Africa (1987) concluded that approximately 80% of Transkei was only suitable for use as rangeland, indicating that livestock farming is likely to be the dominant component of the majority of agricultural enterprises. However, throughout most of the region localised pockets of arable land occur and the abundance of water resources offers opportunities for the development of small-scale irrigation. The region, therefore, has the potential to support a substantial agricultural sector based on enterprises in which intensive crop production and extensive or semi-intensive animal production are integrated. Integration of the two systems also has the advantage of offering opportunities for on-farm nutrient management, whereby animal manures are used to fertilise cropped land.

2.4.3 FACTORS AFFECTING THE EXPLOITATION OF THE NATURAL RESOURCE POTENTIAL

2.4.3.1 Large number of small farming units

Culturally, African society in Transkei view access to land as a basic right, whereby a married man belonging to a tribe would be given access to the tribal land resources to feed his family. During pre-colonial times the resulting increase in pressure on land was compensated for by expansion and colonisation of new land. However, the 19th century wars between the Xhosa and the combined military powers of the white farming community in the Cape and the English colonial administration first halted expansion and later reduced the territory accessible to the Xhosa people.

The population of Transkei increased from 900 000 people in 1904 to 2 million in 1970 and 3.5 million people at present. This represents a four-fold increase over a period less than one century. As a result, of the cultural and tribal traditions governing access to land, the finite land resource had to be shared by an increasing number of people. The obvious consequence was a reduction in the land allocation per household.

Most of the land in Transkei is communally owned or tribal land. Communal land covers 3 681 714 ha (84.3% of total area). It is subdivided into 940 administrative areas. In 1993 this land was occupied by 408 684 land-holding households. Functionally, 349 462 ha (9.49%) of this land was allocated for residential purposes, 1 139 733 ha (30.96%) to arable land and 2 192 519 ha (59.55%) to rangeland (Department of Agriculture, Planning Division, 1993). Probably little has changed since 1993, except that some more rangeland has been converted into residential land (0.25 ha allocation) to accommodate land-seeking households. Using the 1993 data, a land-holding household has access to an average land resource of 9 ha consisting of a residential site of 0.86 ha, which includes one or more home gardens, an arable allocation of 2.79 ha and a share in the rangeland equivalent to 5.36 ha. The overall result is that most of Transkei has been subdivided into a very large number of small farming units.

2.4.3.2. Development of dependency on external sources of income and focus on internal objectives

Historically, subsistence farming which provided for the needs of the indigenous population of Transkei evolved into sub-subsistence farming from about 1850 onwards. Sub-subsistence farming is

similar to subsistence farming but does no longer provide for all the nutritional needs of the farming households. Many historical factors including land pressure, decimation of herds by catastrophic events such as Rinderpest and the great cattle killing of the 1850s, and the introduction of western technology such as the metal plough, resulted in Transkeian households becoming increasingly dependent on external income to support their farming. Initially, such income was derived from working on white-owned farms and in the ox-wagon transport sector and since the turn of the century from mining. The huge demand for labour by the South African mining sector, and government policies of the Union of South Africa aimed at assisting the mining sector to meet this demand led to the migrant worker system which dominated the economy of Transkei until the mid 1980s.

Young Transkeian men were recruited by the mines and spent their most productive years in the employment of the South African mining houses. Part of their wages were sent home as remittances, supporting the parental homestead, and building up a dowry to start their own family. Once married, a man would request the chief to allocate him a homestead and arable land, unless he was the first born son in which case he would inherit the parental homestead and land holdings. He would then use part of his wages to capitalise his own homestead and farm, buying livestock, agricultural equipment and furniture. In the absence of able-bodied men farming was conducted by old men, women and children. When a migrant worker reached the age of about 40 to 45 he was usually laid off, returned home and became actively involved in farming. The objectives of his farming activities included meeting the family's food needs and building up assets in the form of livestock, to assist his sons for when they were ready to

pay dowry and start their own families. The role of arming in this socio-economic and cultural context did not provide the necessary incentives for agriculture in Transkei to develop into a commercially oriented sector.

2.4.3.3 Some past government policies

Increasing pressure on the Land and a traditional settlement pattern that consisted of dispersed clusters of homesteads surrounded by cultivated land were factors causing marginal land to be taken into cultivation. By the 1930s the degradation that had occurred in the territory had become a serious concern for government, leading to legislation aimed at protecting and rehabilitating land in Transkei and other "native areas". In the Eastern Cape homeland areas this legislation was implemented by means of "Betterment". Betterment involved the functional subdivision of land into residential, arable and grazing, and the application of regulations which addressed concerns about overstocking and soil erosion.

In Transkei Betterment was implemented in three phases (Moll, 1983). The first phase, which occurred from 1935 to 1944, applied to Trust Land only. Trust Land was land formerly owned by whites that was bought by the State with the object of consolidating "native land areas" and increasing the amount of land accessible to Africans. The second phase of Betterment, implemented during the period 1945-1955, was aimed at rehabilitating existing tribal land through functional planning of the land in way similar to Trust Land. The third phase of Betterment occurred after 1955 and was aimed at stabilising the "native areas" by accommodating the need for land of a growing population. This was achieved by creating a

system of rural local government based on Tribal Authorities facilitating further subdivision of existing tribal land, and by additional purchases of land by the state from white farmers for settlement of black people. Technically, this phase came to an end when new local government structures were installed following the 1995 local government elections, but in some ways the objectives of the third phase of Betterment are still being pursued at present.

"Betterment planning" was a government initiative which was not always supported by the recipient population and in some cases resisted vehemently. Its implementation required infrastructural development and the state took responsibility for the cost. Infrastructural development often included roads, and dams or boreholes for the provision of water for people and livestock, but in all cases it involved the erection of fences. These fences were needed to separate arable and residential land from the range and to separate the rangeland into camps. Infrastructural development was not accompanied by the building of local capacity to maintain it and also did not ensure that ownership of and responsibility for the infrastructure was transferred to the local community.

Over the years much of this infrastructure has deteriorated and is no longer in working order. Some of the fencing separating camps was dismantled and used to fence off individual residential sites, because the use of a camp system was rarely supported by communities (Scogings *et al.*, 1996). The need for a fence to protect arable land against damage by livestock is acutely realised by most farmers, because the boys who used to herd livestock are now all at school. As a result, Transkei farmers and their counterparts in Ciskei have made many calls on government to replace "its" fencing. It appears that the present government has

no intention of responding to this request unless communities show a clear commitment to ownership and responsibility for maintenance of any infrastructure to be erected or replaced. Thus far government has not made available the amount of funding needed to make any kind of impact on the current situation.

There is no doubt that the state-initiated and -implemented "Betterment planning" resulted in farmers in communal areas of Transkei adopting an attitude of dependency with respect to rural infrastructure. In some cases the state of fencing that protected arable land has deteriorated so much that crop production is no longer possible. This has resulted in many farmers abandoning the cultivation of their arable lands, thus limiting crop production to home gardens only.

During the 1980's the Transkei government attempted to modernise maize production in the communal areas. Using its agent, the parastatal TRACOR, farmers were encouraged to purchase production packages, which consisted of a tractor service, hybrid seed, chemical fertilisers and chemicals for plant protection (usually granular Dipterex). These packages were provided on credit and resulted in farmers increasing their yield substantially (van Averbeke and De Lange, 1995). However, problems were encountered with the recovery of loans and the scheme was not financially sustainable. These interventions did have a long-term positive effect on farming in the communal areas of Transkei. A recent survey conducted in the Xhora district showed that many farmers continued the use of chemical pest control and many had adopted a fertiliser strategy involving the combination of organic manure and chemical fertiliser mixtures (van Averbeke, unpublished). However, the dependency on

tractors for land preparation, partly caused by the TRACOR intervention, appeared to have affected the financial viability of maize production, because these services are now in private hands and constitute the main operational cost.

Another major intervention by the Transkei Government was the development of agricultural production schemes. In the dry western part of Transkei (Cofimvaba and Tsomo districts) several medium scale irrigation schemes were developed at Qamata, Ncora and Xonxa. Planning, implementation and operation were executed in a paternalistic manner and relied heavily on external expertise and leadership. The schemes used modern technology which was purchased at enormous cost, but when political processes demanded that farmers assume ownership of these schemes the legacy of non-participatory planning and operation of the schemes proved to be a major stumbling block causing conflict among the intended beneficiaries. In 1996, the intensity of land use on these schemes was lower than on adjacent dryland (Katling 1996). All these schemes have been provided with electricity and telecommunication. Their potential to become locomotives of local development remains high, but a major effort will be needed to solve the social conflicts that continues to haunt them.

In the eastern districts of Lusikisiki and Bizana, the Transkei government initiated a tea growing scheme, which until recently was known as the Magwa Tea Corporation, a parastatal body. Once a profitable concern, the Corporation became the victim of corruption and political interference and was faced with closure by 1996 because of its huge demand on financial assistance by the state. Since then, the local community assisted by technical personnel and a government-appointed transformation manager

has been able to turn adversity into opportunity, and the scheme is returning to profitability.

Another scheme that was initiated in the eastern district of Bizana involved the production of sugar. An overview of this scheme based on interviews with farmers is presented in the results of this study.

From this overview of some major state interventions aimed at resource conservation and the modernisation and commercialisation of agriculture in Transkei it is evident that success has been largely lacking. Most of the challenges and constraints preventing higher levels of exploitation of the agricultural potential of Transkei remain unresolved.

2.5. LAND TENURE IN THE TRANSKEI

2.5.1. Introduction

The term "land tenure" refers to the institutions governing the rights to use and transfer land, to the fruits derived from land and to the duties that go with those rights.

According to Ali, (1979), the term " Land Tenure " is used to express legal relationship between persons, groups and classes that regulate the use of land transfer thereof and enjoyment of the products and the duties that go with those rights. In other words, Land Tenure means the manner in which land is held. It can therefore be considered as a reflection of power relationships between persons and groups in the use of land. This discussion is provided because an understanding of the land tenure systems in the former Transkei is fundamental to any effort to alter or develop agriculture in the region.

There are two main types of land tenure in Transkei, namely individual tenure and communal tenure. Individual tenure arrangements include freehold, quitrent and leasehold. Communal tenure has its origin in the indigenous way in which local African people held land, but over time the indigenous tenure system was subjected to a number of modifications by South African and Transkeian legislation.

Most farmers in Transkei farm on land subject to some form of communal tenure. A limited number are operating on leased land, mainly on farms that were purchased from white farmers by the South African Development Trust (SADT) and handed over to the Transkei government for farmer settlement. In Transkei, freehold tenure, which applies to significant areas of agricultural land in Ciskei, appears limited mainly to land in urban areas (Transkei Land Reform Research Group, 1995). Quitrent tenure, which dates back to colonial times, is common in Transkei especially in the western parts of the territory (Cofimvaba, and Butterworth). Quitrent shares with freehold that the deed is registered, but a number of restriction apply to the transfer of land, and holders of quitrent land are expected to pay an annual rent to the state in order to maintain their land rights.

The tenure systems applying to the former homelands of South Africa have been a matter of concern. Bembridge (1984) was of the opinion that Transkeians were victims of a system of communal land tenure which militated against effective land use. He estimated that at the end of the 1970s a rural family required a minimum of 3.4 ha of arable land to sustain itself, but the communal tenure system did not allow for efficient re-allocation of

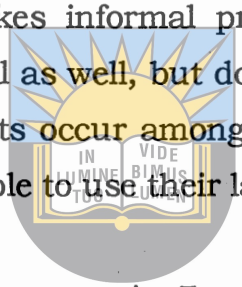
land. As a result, households interested in agriculture were unable to gain access to sufficient arable land for farming to become a viable alternative to wage employment retaining able-bodied males in the rural areas. Freehold tenure is not an absolute prerequisite for increased food production, but in South Africa it seems to have provided the best opportunities for high, sustained agricultural productivity, especially because it could be used as collateral and provided a high level of security to the owners of such land. Secure tenure is especially important when investment in land improvements are being considered.

2.5.2 Communal land tenure

Communal land tenure refers to a bundle of rights allocated to members of a community that pertain to land held by that community. Members have right of access to a commonage (rangeland) for grazing their livestock, collect thatching grass and in some cases firewood and other materials that are of use (medicinal plants, building sand, etc.). Members also have the right to a residential site and an arable land allocation. Where communal land tenure has been modified by functional planning of the land (Betterment or Trust Planning) the right of access to arable land is limited by the availability of such land, and not all members enjoy this right. Where functional planning of the land by government did not occur, members of the community in need of arable land may obtain permission from the traditional authorities to excise a new arable allocation from the commonage.

The sale of communal land is illegal, and as a rule effectively prevented. Transfer of land (other than by inheritance) between individuals is a public affair and usually a difficult process (Kruger,

1995). Inheritance from father to oldest son is usually the norm, but not automatic as the heir still has to apply for the land in question. Landless sons can apply to the headman and council and wait for land to become available. Women are permitted to hold land only temporarily as widows after the death of the male holder. Upon her death the land passes to the designated male heir (Cross, 1991). In theory, land rights are supposed to revert to the tribe or community on the death of the landholder for reallocation by the authorities, but this provision does not appear to be enforced, and the right of the family takes informal precedence (Cross, 1991). Subdivision of land is illegal as well, but does take place informally. Sharecropping arrangements occur among villagers, and especially assist widows who are unable to use their land.



In the communal tenure systems in Transkei, rights to land are held in terms of:

* **Certificates of occupation** where the individual's right to use residential stands and arable allotments is registered with the magistrate after approval by the Tribal Authority.
* **Permission to Occupy** which is similar to a Certificate of Occupation, but applies to business or institutional premises such as trading stores, garages, churches, schools etc.
* **Grazing rights** on commonages in the tribal areas available to all stockowners in the location

At present all communally held land is *de jure* state land and falls under the jurisdiction of the Minister of Land Affairs. The d*e facto* situation is quite different, and most holders of communal land allocations view themselves as legal owners, especially with respect to residential and arable land. However, the institutions governing communal land appear to have failed in providing adequate

incentive and security to encourage landholders to actively exchange land, for example by means of land-lease arrangements. This has largely prevented scale enlargement, which in many cases may be necessary for commercialisation of agriculture in Transkei to succeed.

2.5.3. Freehold tenure

Under this form of tenure land is owned by individuals or organisations who hold title deed registered at the Deeds Office. Freehold land is obtained through purchase or inheritance, and owners in turn are generally free to sell the land. Freehold title provides the owner with a considerable degree of security of tenure in that land does not have to be occupied or used to be retained. Freehold land is also free of many controls by administrative and governmental bodies, who can only enforce limited conditions on land use. Freehold agricultural land is limited in Transkei and according to the Transkei Land Reform Research Group (1995) involved 538 farms with a combined area of 81 000 ha. In Ciskei freehold agricultural land occurs more commonly, but in the title deed to such land it was often stated that the owner or his descendants were not allowed to alienate the land by sale or lease or in any other manner without written permission from the responsible minister (Cokwana, 1988).

2.5.4. Quitrent tenure

Quitrent is a form of conditional individual tenure and quite common in Ciskei and the western part of Transkei. It was introduced by the colonial administration to give farmers relative security, while maintaining the means to dispossess if the state did

not approve of land use practices. Quitrent title gives permanent possession of the land to the registered holder in return for a yearly payment of a nominal rent. The holdings are surveyed plots whose transfer must be recorded with the Registrar of Deeds, and they can be sold, but only after the consent of the family and the magistrate has been obtained (Kruger, 1995). Formal sale is a rare occurrence, and access to quitrent land seems to circulate through sharecropping arrangements with absentee quitrent landlords who work and live in urban areas (Cross, 1991). As with communal tenure, people have rights to residential, arable and grazing land. The size of residential sites is officially limited to 0.43 hectares and the size of arable allotments to 3.43 hectares. Arable land held by means of quitrent could be obtained by inheritance or by purchase. Purchase required ministerial approval and inheritance was also subject to restrictions. Allotments may not be subdivided or held by women but must be allocated to a male, usually passing from father to eldest son, or failing direct male issue, to collateral male kin (De Wet, 1987).

As with the other forms of tenure discussed above, quitrent holders were subject to a variety of conditions and restrictions. Selling, giving or mortgaging of land required permission from the relevant government administration (Cokwana, 1988). Transfer by will was prohibited, and inheritance was state determined. Leasing of land could only take place with the permission of the administration, and subdivision was also prohibited, although it did take place on an informal basis. Finally, a person could forfeit his rights when he did not pay his quitrent, did not cultivate his land, or was guilty of stock theft. The magistrate was, however, obliged to consult with the Minister before taking any action (De Wet, 1987).

Quitrent tenure contained elements of freehold tenure providing holders with sufficient security to protect them from arbitrary state intervention. This is evidenced by the relatively limited impact that betterment planning has had in these areas. (De Wet, 1987) On the other hand, quitrent was severely restricted as to use- and transfer rights, which inhibited peoples' ability to respond to new circumstances (Cross, 1991).

2.5.5. Leasehold

The leasehold system is a formal agreement between two parties to rent land for the purpose of agricultural production for a given period of time. The agreement could either be formally registered or be an unregistered agreement between individuals. The Transkei government entered into agreements with individuals to lease farms known as the 'released' areas. These 'released areas' were white-owned farms located within the boundaries of declared homeland areas that were bought up by the South African Development Trust (SADT) in order to consolidate the homelands. This land was then transferred by the SADT to the homeland administration. Some of these released areas were used to settle communities in search of land, but others were made available to individuals with an interest in farming commercially by means of a leasehold. In Transkei all the leases were registered with the Transkei Department of Local Government and Land Tenure. During the period 1982 to 1985, approximately 100 000 ha of farmland were transferred to the Department of Agriculture and Forestry (DAF) for the development of commercial farming among black people in Transkei. The long-term objective of the DAF strategy was to develop a class of viable commercial farmers

holding freehold land under a leasehold system, while ensuring optimal land use.

The distribution of farms held by leasehold in Transkei is shown in table 2.5.

Table 2.5 Location and extent of leased government farms, 1994*

Area	District	Total area (ha)	Number of farming units
Beestekraal	Cala	4 941	15
Butterworth	Butterworth	2 494	11
Cole Farms	Umzimkhulu	5 310	6
Guba	Lady Frere	16 830	60
Gwatyu	Cofimvaba	31 618	114
Mvenyane	Mt Currie	2 333	6
Ongeluksnek	Maluti	6 431	34
Pitseng	Mt Fletcher	14 287	33
Port St Johns	Port St Johns	1 282	25
Teko	Centane	308	12
Umnga Flats	Tsolo	9 000	38
Umtata	Umtata	566	5
TOTAL		**95 400**	**359**

*** Source: Transkei Land Reform Research Group (1995)**

2.6 AGRICULTURAL SCHEMES

The former Transkei Government established a number of schemes on land which was held under communal tenure. New land tenure systems were introduced in order to implement the schemes and consolidate control over the land. Usually, all land to form part of a scheme was first consolidated then it was subdivided into functional parts. In most cases the major part of the land would be farmed as an estate, managed by external experts. The rest would be redistributed among the original land right holders for their private use, but the new land allocations were obviously smaller than the original holdings. At some of the schemes (Ncora,

Xonxa) the collapse of the estate component during the late 1980s and early 1990s resulted in the original land right holders claiming their land back. Tenurial problems at these schemes are thought to be one of the major causes for the failure of the schemes to resume production (Commission of Enquiry, 1996a, 1996b). At Qamata Irrigation Scheme, where land redistribution during scheme implementation respected original land sizes, conflicts around land tenure appear less problematic. At Magwa Tea it appears that land right holders saw benefit in allowing the estate to keep control of their land and suggested the establishment of a land holding corporation (communal property association) that will lease the land to the estate. This will enable the local community to derive benefits from the lease of land and from employment by the estate.

2.7 INSTITUTIONAL FACTORS

Many factors contribute to a reduction in increased food security and the absence of essential services in agricultural production discourages agricultural development. Amongst such factors are the farmer support programmes, extension services, government policy on agriculture, research institutions, technical advice and information systems.

In his paper, Mckenzie (1992) mentioned that:

"- provision of seasonal and other production inputs
- provision of mechanisation services with emphasis placed on the establishment of local contractors
- provision of infrastructure
- provision of marketing services such as the financing of storage, grading and transport facilities

- provision of extension, training, demonstration and research and
- policy formulation and project preparation assistance "

would solve the problems of absence of institutional factors, which constrain agricultural production.

Farmers in Transkei are operating in a difficult environment, in the sense that few or none of the institutional requirements and supporting services necessary for successful agricultural development have been adequately fulfilled (Development Southern Africa, 1987)

Against this background the idea is to understand the problems and characteristics of the farmers as much as possible from their point of view through this survey and to collect as much information as required to understand their situation.

2.7.1 Institutional support

Successful agricultural production requires strong institutional support in the form of operational policies, markets, credit, land tenure, input supplies, local organisations and rural infrastructure, such as roads, water supplies, rural service centres and fencing. These were found to be lacking in varying degrees in the developing countries. Extension is therefore only part of, albeit an important part, of the solution to improving agricultural production and rural welfare. The improvement of institutional support also relies on significant improvements in the management of institutions, including extension, as well as an awareness of farmers' fundamental needs, which in some instances may be non-agricultural (Koch & Hayward, 1990)

Bembridge (1986) says that it is equally true that inadequate institutional support in the less developed areas has, in general, failed to provide the necessary incentives for small-scale producers. Policy statements are more often than not drawn up in very general terms without any stipulation as to production and income targets or *modus operandi* and this is due to a general lack of wide ranging knowledge of the grass-roots rural situation, which is an essential pre-requisite for sound planning and development. So far, none of the institutional requirements have been adequately fulfilled.

2.7.2 Extension services

The farmer's confidence in the extension worker influences the rate of adoption of farming practices (Williams, 1972). It would appear that whether an individual farmer has contact with the extension service or not depends in large measure on his perceptions of the service, and how he interprets its effects on farmers visited by the extension officer (Quigley, 1977).

The farmers have on several occasions expressed their need for extension services, Bembridge (1984) expressed that the majority of farmers (84%) in his study area said that they needed help and advice with their farming and were therefore receptive to extension information. As much as these services are required by the farmers, Bembridge (1984) assessed the extension services in former Transkei and concluded that it operated haphazardly with neither priorities nor plans, resulting in its objectives not being achieved.

2.7.3 Credit facilities

The South African Government White paper on Agriculture (1995), indicated that most financial institutions, whether in the private or public sector, were serving only a part of the agricultural sector and that many black farmers, small-holders and part time farmers did not have access to these activities.

The realisation that farmers need to be provided with credit facilities is crucial to permit the improvements to land use and buildings of their own, the acquisition of modern tools, use of best materials and also to exploit market price fluctuations to their own advantage.

According to Bembridge (1984), as far as Transkei is concerned, credit facilities are singularly lacking. It takes months for small scale farmers to receive return on their labour, and the supply of agricultural produce is seasonal.

Small scale farmers simply do not have the resources for production (Dhawan and Kahlon, 1978). They need more capital than they can save.

The study by Bembridge (1986) agrees that credit is still inadequate, or inaccessible to the majority of small-scale farmers in the developing areas and as van Averbeke *et al (1998),* has indicated, providing credit and finance to small scale farmers is a major issue in most developing countries of the world. There is evidence that lack of credit and available finance provided to the farmer at the right time may constitute a constraint in development. Studies by Igodan (1991) as cited by van Averbeke (1998), small scale farmers are often discriminated against because of their relatively poor resource background.

2.7.4 Technology

Africa is still the world's least mechanised region with 1% of farm power provided by mechanical means, 10% from animals and human power accounting for the remaining 89% (Mariga *et.al.*1998). Further, the technologies developed do not meet the entire array of farmer aspirations, and sometimes are found to be incompatible with the small scale farmer, particularly women, and are hence generally unable to deliver expected results.

Important technological advances have been made by researchers in Southern Africa, in almost every facet of commercial agricultural production and development. Bembridge (1986) says that adoption of technology will accelerate only if innovations are appropriate to the local socio-economic, cultural and agro-climate environment. Micro-level studies have shown the need for farming systems research aimed at coming out with improved practices which are inexpensive, labour saving, dependable and predictable to small-scale farmers. Technology in small-scale agriculture must be aimed at overcoming the most limiting scarce resources.

According to Sibuga (1998), agricultural technology refers to interventions which when applied or implemented can bring about increments in *per capita* production. He further says that the technologies developed do not meet the entire array of farmer aspirations, and sometimes are found to be incompatible with the typical conditions of the small-scale farmer, particularly women, and hence generally unable to deliver the expected results

2.8 FARMING CONSTRAINTS TO SMALL SCALE FARMERS

The farm as a unit has diverse needs and constraints which limit productivity and they can either be biological or social in nature. According to Anon(1984), the constraints faced by smallholder farmers is quite comprehensive, as by and large, these constraints describe the scenario in almost all Southern African States.Notably, van Rooyen (1994) indicated the following constraints to small-scale farming:

- A mechanisation service, which caters for aspects of transportation, land preparation, planting and cultivation, as well as the maintenance of machinery, implements and infrastructure;
- Marketing channels and services to cater for all aspects of marketing (grading, storage, packing and transport);
- Training to facilitate development of managerial and technical skills needed both on the farm and at a project level;
- *de facto* rights to production which could include land security, contracts and quotas
- Off farm agricultural infrastructure necessary to support farming.

2.9 SUMMARY

The provision of enough food at affordable prices remains the most essential role that the agricultural sector has to play . Agriculture is fundamental to community development and without certain basic requirements agricultural development cannot take place. The ordinary Transkei farmer is definitely affected by one or more constraints which are the result of under exploitation of the agricultural potential of the Transkei.

CHAPTER 3

METHODOLOGY

3.1 STUDY AREA

The Transkei is located between 27^0 and 30^0 east and 30^0 and 33^0 south. Situated in the South East of Southern Africa it is bounded by the Indian ocean in the South East, the Kingdom of Lesotho in the North and by the province of KwaZulu-Natal in the North-East. Transkei has a total area of some 43 652 km^2 and thus represents approximately 26% of the Eastern Cape Province. Almost 40 000 km^2 is in one consolidated block of 26 districts while two outlying districts, Herschel and Umzimkhulu, are in close proximity. See the Map of the Eastern Cape showing the former Transkei, Fig. 1

3.2. ORIENTATION AND PLANNING

This study was conducted in all 28 Magisterial districts (see fig. 1) of the Transkei region and was conducted in two phases. The objective of the first phase was to obtain a general idea of commercial farming in Transkei, including types of enterprises and their distribution. The second phase consisted of a survey aimed at collecting detailed information on a selection of farmers.

Initially the target group was defined as commercial farmers or groups of farmers who had access to at least 10 ha of land. It soon became apparent that this definition was too narrow. Consequently, the target group was re-defined as consisting of all

Map of the Eastern Cape showing Magisterial Districts

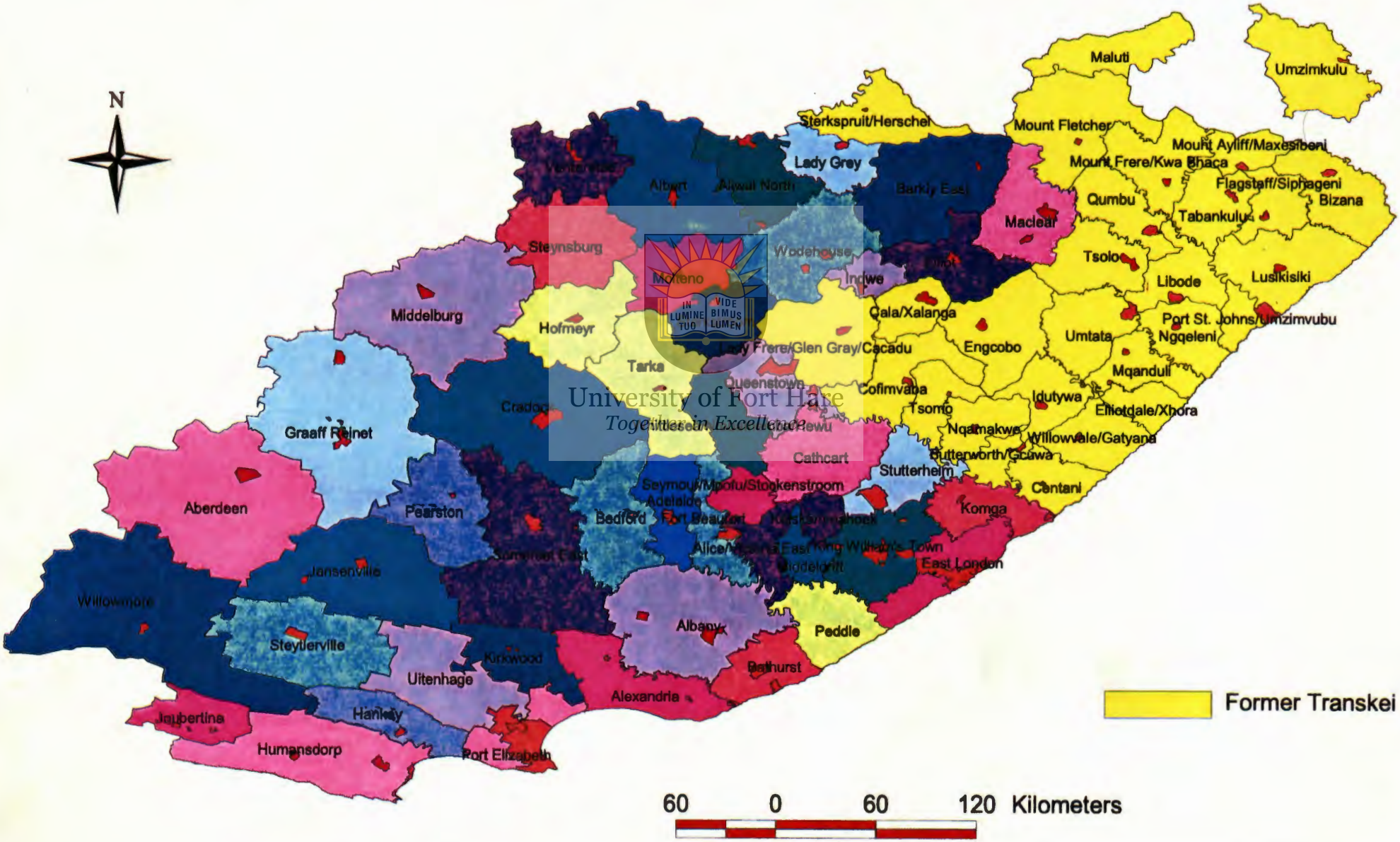


Figure 1 Map of the Eastern Cape showing the study area-the former Transkei

Transkei farmers or groups of farmers engaged in any form of farming as a business without any emphasis on the land size. All categories of enterprises in agricultural production were considered as long as there was the clear objective of generating monetary income in the production process.

The researchers sought and obtained the support of the Director of Extension services of the Department of Land Affairs and Agriculture of the Eastern Cape and its district control officers. An announcement was made over Radio Transkei and Radio Xhosa calling on all commercial farmers and encouraging them to provide their particulars and the type of enterprises they were engaged in either by phone or fax directly to the ARDRI office or to their various District Agriculture offices. Parastatals, NGO's and farmers' unions were also approached to provide information on commercial farming in the areas they serve. The objective of the study was explained at all levels. A report was provided to AGRELEK (Natal office) in November 1996 regarding these findings comprising phase one of the project.

The researcher constructed a survey instrument (questionnaire) to be administered to commercial farmers by means of face-to-face interviews. The development of the questionnaire was done in consultation with Mrs Kruger at the Cape Town Office of AGRELEK and the Director of ARDRI. The final version of the questionnaire was approved in April 1996 and field work started soon thereafter. Letters were sent to all the 28 district offices of the Department of Agriculture and Land Affairs informing extension staff of the dates that the survey team intended to visit their district, and requesting them to communicate this information to the commercial farmers

in their areas. This information was also announced on Radio Xhosa and Radio Transkei in order to develop awareness among farmers.

Although an attempt was made to contact all commercial farmers in the twenty-eight districts of Transkei through district agriculture offices and farmers' unions, organising farmers in all the districts of Transkei was limited by poor telecommunication in most areas and the possible lack of co-operation from some of the potential sources. In a few districts, farmers indicated through their associations that they have been researched before without deriving benefits, and they were not prepared to co-operate. The study was, therefore, limited to those commercial farmers who were co-operative and willing to be interviewed. The final selection of the the participating farmers was therefore purposive. Parastatals, such as Magwa Tea, and the irrigation schemes at Ncora, Qamata and Xonxa currently on the electrical net and using electrical power and also with farmer support services, were not included in the surveys.

3.3 POPULATION AND SAMPLE

Since the focus of the study was on all farmers in the former Transkei engaged in farming as a business, it became necessary to select a study sample of farmers who were at the time directly involved in such form of farming. The aim of the sampling was to cover almost all the districts of Transkei. The list of farmers which was provided to the researcher by the farmers themselves and the Extension officers numbered a total of two hundred and thirty five . From the list of farmers provided, a decision was taken to survey about 70 percent of them with farmers chosen from all 28 districts

and also to conduct group interviews where the situations allowed. The reason for selecting this population was that the focus of the study was only on the commercial aspect of farming in this former homeland. It was also decided that a systematic sampling should be used. A random starting point was selected from each list, whereby every fifth or second name was chosen depending on the number of farmers in that particular district.

According to Labovitz and Hagedorn (1976), the results of a systematic sampling are usually close to those obtained from strict random sampling. Systematic sampling can create bias if lists are ordered from high to low or low to high on an important characteristic or if alphabetical order is used.

The final sample size consisted of 135 farmers which is 57% of individual interviews. There were also six group interviews that were conducted in six districts of Transkei and these interviews fall outside the 57% as stated above.

3.4 THE INSTRUMENT

For the purpose of this study, interviews were conducted and a questionnaire was developed to examine four categories relevant to the objectives of the study: the demographic characteristics, the general overview of the commercial agriculture in Transkei, cropping practices, livestock and use of electrical technology. The farmers were asked a series of questions in order to assess their farming situation as shown in the instrument itself.

3.5 PRE-TESING PROCEDURES

To pre-test the survey instrument, the first copy of the questionnaire was presented to the supervisor for suggested omissions and additions. The second draft was then discussed with the staff of the Institute and to comment on the clarity of question design and wording to ensure that the questions were directly related to the objectives of the study. The second draft was also sent to AGRELEK for further comments and to ensure that the questions raised meet their expectations as commissioners of the study. The contribution from all parties involved made slight alterations to the questionnaire.

To further test the instrument, a sample of ten commercial farmers in the Berlin district of the former Republic of South Africa was conducted before the start of the actual survey in the Transkei. This strategy led to some few changes in the sequence of questions and the addition of some concerns among farmers.

3.6. DATA COLLECTION

The data collection was started in July 1996 and the process stretched to the end of May 1997. The total number of farmers that were interviewed came to one hundred and thirty five (135). Out of the identified original number of farmers (which was 237), the percentage of respondents came to fifty seven. This figure does not take into consideration the group of farmers that were jointly interviewed.

Some of the targeted farmers were found not to be existing and some were still in the process of engaging into the commercialisation process. The only solution was to interview

those farmers that could be identified at the time of the survey and were actively involved in production with the help of the extension officers. Some of the farmers were not in the original lists that were provided to the researcher.

In general each individual farmer was interviewed and ARDRI personnel, acting as enumerators or research informants completed questionnaires (Appendix 1) as the interview proceeded. Those who indicated they did joint marketing were treated as a group and interviewed jointly. Those farmers who constituted a club or association but marketed as individuals (e.g. community schemes) were assessed by finding out about their general concerns. In districts where there were ten or more commercial farmers participating in the structured interviews, group interviews were also conducted on general concerns and limitations on agricultural production. The district agriculture offices were used for such collective interviews. The researchers visited the enterprises of all interviewed farmers. Because of logistic problems and time constraints the research team was not able to interview all farmers who had responded to the pre-survey publicity (phase one of the study). The total number of farmers, which amounts to 235, that were contacted during phase one and those that were provided by the farmers unions and the district agricultural offices were not provided in this study as an appendix for security reasons. The final list of interviewed farmers during the second phase of the study amounted to 135 and their names and enterprises they are involved in are listed in appendix 2.

The farmers were interviewed on their respective project sites to and interviews were conducted in both Xhosa and English for those farmers who speak other languages for example Sotho in Matatiele. The advantage of this was to enable the researcher to compare the observed and the given information on the farm. This

also afforded the researcher to take some shots of the longitude and latitude (Geographic information systems) readings for the farm which will assist any developer who might be interest to be able to locate where these farming enterprises are found.

Participatory Rural Appraisal (PRA) was also used as a research method to get information from the group of farmers that were interviewed collectively. In the process the researcher acted as a facilitator in data gathering from the farmers. The PRA tools that were applied were Timeline, Matrices and Transects. Timeline assisted in providing the qualitative data on the history of the farms and other related information about the farms thy are occupying. Timeline assisted in identifying issues related to change in agriculture and landuse, it also gives an indication of previous development interventions. Matrices is a tool which allows the farmers to express their preferences and/or uses for or of resources. The farmers are allowed to identify the issues of importance to them and therefore rank them according to preference or priority. Transects were used to observe the situation in the field as reported by the farmers and also to discover those aspect that the researcher is not informed of so as to ask questions and points of clarification. Secondary data review was also used to get more information on the farming activities that are taking place where these groups of farmers are engaged.

3.7. DATA ANALYSIS

All data were coded, processed and analysed in an EXCEL data base. The names and addresses of all interviewed farmers appear in Appendix 2. Spatial data (latitude and longitude of the farms) was captured and are also presented in Appendix 2.

CHAPTER 4

FINDINGS

This chapter presents the findings as revealed by the data analysis under the different aspects which were considered to be relevant in line with the study objectives.

4.1. LAND TENURE STATUS OF INTERVIEWED FARMERS

As revealed by the findings, the most dominant tenure system amongst the Transkei farmers is the communal tenure which accounts for 39% of the five systems indicated in table 4.1. The LAPC report of 1995 mentions that most people who were interviewed in Transkei were living on land administered under the "communal tenure", it states that these people did not express a desire for individual ownership of land. What did come out strongly was that people felt fairly secure in their tenure, but were concerned about land availability for future generations. The main advantage of this system of land allocation is that it provides relatively easy and cheap access to land.

As indicated in chapter two (2.5.2) the institutions governing communal land appear to have failed in providing adequate incentive and security to encourage landholders to actively exchange land, for example by means of land-lease arrangements. This has largely prevented scale enlargement, which in many cases may be necessary for commercialisation of agriculture in Transkei to succeed. The leased state land system which is the second dominant form has not been motivational in encouraging production as this system is surrounded by all forms of problems ranging from infrastructure,

squatters and lack of clarity on how these farms will eventually be transferred to the present occupants.

Table 4.1. Land tenure status of respondents, Transkei, 1996(n=135)

Type of tenure	Number	Proportion (%)	Area (ha)
Freehold	14	10.3	924.1
Quitrent	5	3.7	58.5
Leased state land	52	38.5	13 991.5
Leased land (other)	2	1.5	502.0
Communal land	55	39.3	433.8
No response	7	5.2	11.1
Total	**135**	**100**	**15 920.0**

The two most frequent forms of land tenure were occupancy of leased state land and occupancy of communal land (Table 4.1). However, in terms of the amount of land involved leased state lands were predominant. Only a little over 10% of farmers occupied their own freehold land. These data confirm that most of the farmers did not have land of their own and further suggest that problems of land security may deter conservation and investment in agricultural infrastructure.

4.2. GIS ANALYSIS AND PRODUCTS

The results of the GIS will be useful in the future development planning of the area. These findings are useful in identifying the dominant enterprises in Transkei and where these are located. As revealed in figure 3 any developer would be able to understand the different localities and where each category of an enterprise is dominant as shown in figure 3. In this study, livestock is the most dominant enterprise throughout the area followed by crops as shown in figure 7. The farmers in the study area have been found to be involved in a diversity of farming enterprises.

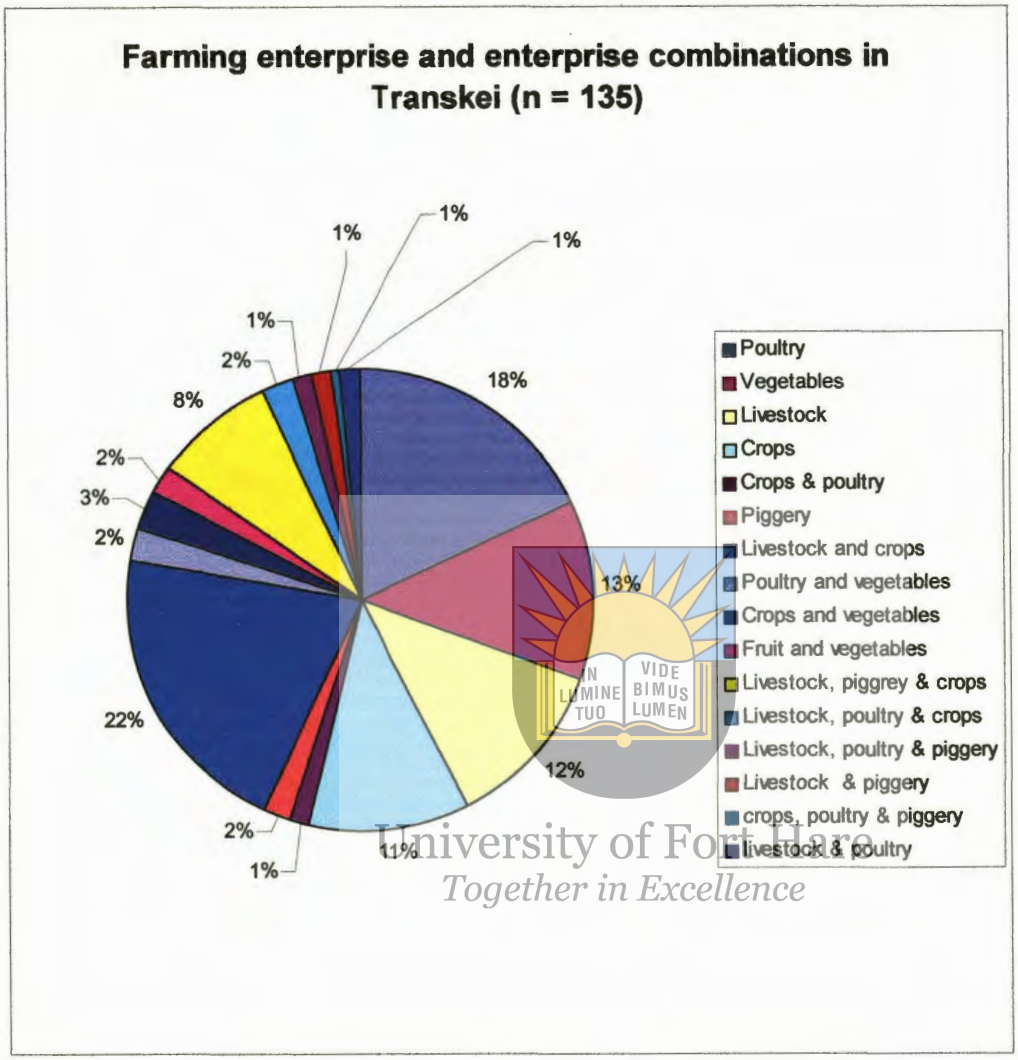


Figure 2: Farming enterprises and enterprise combinations in Transkei (n = 135)

Some farmers are farming with more than one enterprise. The various enterprises and the enterprise combinations are shown in figure 2.

The locations of all farm enterprises were captured by means of a Geographic Positioning System (GPS). The location co-ordinates (latitude and longitude) are shown in Appendix 2 and are also provided in digital format. Farm enterprises and enterprise types are also plotted according to district in Figure 3. GIS analysis

4.3. FARMING AND LAND USE PATTERNS

The study revealed a diversity in farming activities in the Transkei. This is confirmed by table4.2 where a variety of farming enterprises are shown. This shows that the area has an undisputed potential for agriculture. In his study, van Rensburg (1976) confirms that the agricultural potential of Transkei is beyond dispute and in section 2.4 (chapter two), it is stated that out of 4.4 million ha of land in the Transkei 4.2 million ha is available for farming. Out of this area, 383 000 ha is suitable for crop production. The 1995 LAPC report stated that communal farming is practised on 84% of Transkei. The Development Bank report, as indicated on section 2.4.2 of this study, concluded that approximately 80% of Transkei was suitable for use as rangeland, indicating that livestock farming is likely to be a dominant component of the majority of agricultural enterprises.

The region as shown by the findings supports the fact that it has the potential to support a substantial agricultural sector based on enterprises in which intensive crop production and extensive or semi-extensive animal production are integrated. The National Department of Agriculture has expressed a concern that in the homelands the present stocking rate exceeds the carrying capacity in virtually all the developing farming areas. Overgrazing has affected the quality of arable land to such an extent that in many areas it is no longer suitable for crop production. In section 4.3.2 (last paragraph) it is indicated that more than a third of the farming land was devoted specifically to livestock production.

4.3.1. Farm enterprise types

In Phase 1 of the study 24 different enterprise types were identified based on the classes of agricultural products produced by each farmer. These types are shown in Appendix 2. However, for

purposes of analysis only the results of the Phase 2 survey were used. Seventeen farm enterprise types were identified in this analysis (Table 4.2). One of these, the poultry and pig combination, was not represented among the interviewees.

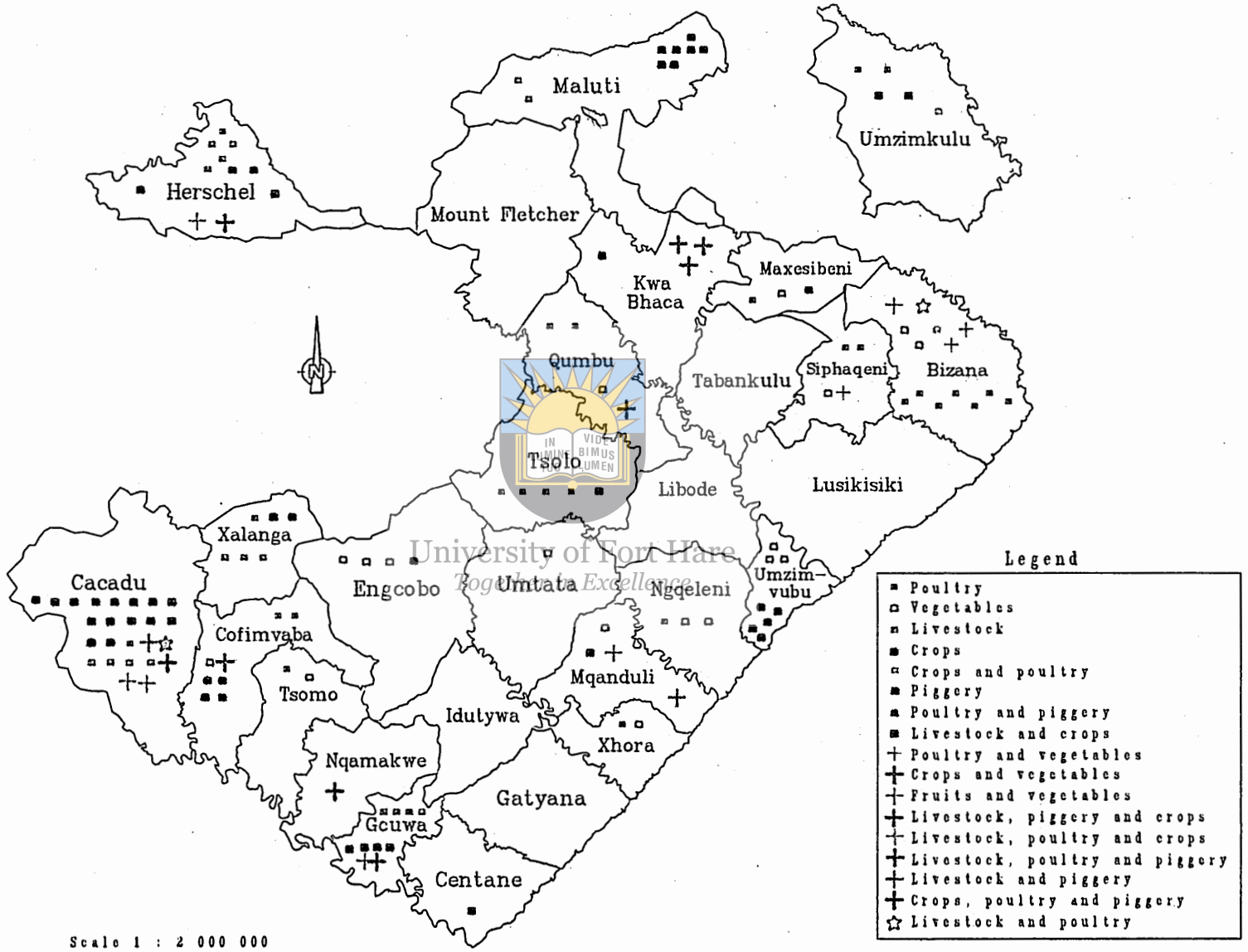


FIGURE 3 **Distribution by district of types of commercial enterprises in Transkei**

Table 4.2. Enterprise type, labour forces, farm size and gross cash sales of farmers, Transkei, 1996 (n=135)

Enterprise type	No. of farms	Mean no. perm. Labourers	Mean no. occasional Labourers	Mean area per farm (ha)	Mean gross cash sales (R)
1.Poultry	26	1.5	0.7	6.0	6 487
2.Vegetables	18	5.9	4.2	51.3	20 961
3.Livestock	16	2.4	1.7	239.8	19 653
4.Crops*	16	6.3	4.6	74.3	14 132
5.Crops & poultry	2	13.0	0	1.5	22 620
6.Pigs	3	0	0	0.2	2 000
7.Poultry & pigs	0	--	--	--	--
8.Livestock & crops	31	4.8	6.8	260.4	42 283
9.Poultry & vegetables	3	0.5	0	1.4	24 781
10.Crops & vegetables	4	2.8	3.5	9.1	3 123
11.Fruits & vegetables	3	6.5	3.5	12.0	45 162
12.Livestock, pigs & crops	3	3.3	7.7	178.0	79 231
13.Livestock, poultry & crops	3	1.3	0	83.0	17 168
14.Livestock, poultry & pigs	2	7.0	0	0.5	67 976
15.Livestock & pigs	2	5.5	4.0	211.5	32 525
16.Crops, poultry & pigs	1	3.0	6.0	10.0	8 460
17. Livestock & poultry	2	4.0	3.0	223.0	11 006
Total	**135**	--	--	**15 920.2**	**3 191 520**
Mean	--	**4.1**	**3.8**	**117.9**	**23 641**

*As used here "crops" refers to field crops (cereals and potatoes).

Farmers represented in the first four enterprise types shown in Table 4.2, comprising slightly more than half of all respondents, specialized in production of a single class of agricultural products. Twenty-six respondents specialised in poultry, making this the second most frequent enterprise type.

Most types of mixed farming enterprises were relatively infrequent with the exception of the livestock and crops combination. Thirty-one farmers were engaged in this enterprise type making this combination the most common enterprise type among respondents.

Of thirteen enterprise types representing mixed farming enterprises, crops were common in six different combinations and involved 44 farmers; livestock was found in six combinations with 43 farmers, poultry in seven types with 13 farmers, vegetables in three combinations involving 10 farmers, and pigs were seen in 5 combinations among 8 farmers.

Crops and livestock featured prominently among farmers. Farmers used an average of 239.9 and 74.3 ha of land for livestock and crops, respectively. Livestock and crops together utilised an average land of 260.4 ha, livestock and pigs as an enterprise used an average land of 211.5 ha, and average land for livestock and poultry was 223 ha. Not surprisingly, livestock enterprises involved more land than other combinations. In contrast the mean size of land used for crops and poultry was 1.5 ha, pigs 0.2 ha, poultry and vegetables (enterprise type 9) 1.4 ha.

Gross cash sales was used to determine the dominant class of products from these commercial farms in Transkei. A class was

considered dominant when it generated 50% or more of gross cash sales. Of the 135 farmers that were interviewed, 126 reported cash sales. In 51 (40.5%) of these farms the dominant class was production of macro-livestock; in 33 (26.2%) micro-livestock; in 25 (19.8%) field crops and 14 (11.1%) vegetables. The remaining three farms (2.3%) did not have a dominant class of products.

Most farmers made use of labour which they hired permanently, occasionally or both. Enterprises involving crop and vegetable production tended to be more labour intensive than others.

4.3.2. Agricultural land uses

The size of farms used by interviewees varied widely from as little as 0.02 ha to 800 ha each . Most farmers used a major portion of their land as natural pasture (Table 4.3) for their animals, with planted trees or crops allocated smaller areas. Only four people had orchards and three had plantations out of the total number of 135 farmers. This suggested that the farmers had not become interested in fruit or plantation crops production, and these were not important income-generating enterprises. Based on farmers' answers in the interviews a substantial amount of the total area (22 %) was not accounted for in this survey. We assumed that the unaccounted land was unused or used for purposes other than the eight land use practices mentioned in Table 4.3.

Table 4.3 Land use allocations on selected Transkei farms during 1996

Land use category	No. of farms with category	Mean size (ha)	Range (ha)	Total area (ha)
Natural Pasture	34	146.9	8.00 – 577	4995.0
Natural forest	16	98.9	1.00 – 694	1582.0
Waste land	10	120.0	2.00 – 800	1200.0
Orchard	4	3.5	0.01 – 10	14.0
Plantation	3	7.7	3.00 – 15	23.0
Field crop	70	36.1	0.06 – 186	2525.7
Horticultural crops	46	13.2	0.01 – 275	605.7
Fallow	41	31.5	0.20 – 337	1291.7
Other uses*	10	15.2	0.20 – 54	151.7
Not accounted for	-	-	-	3531.2

* This included among others land used for poultry and piggery production

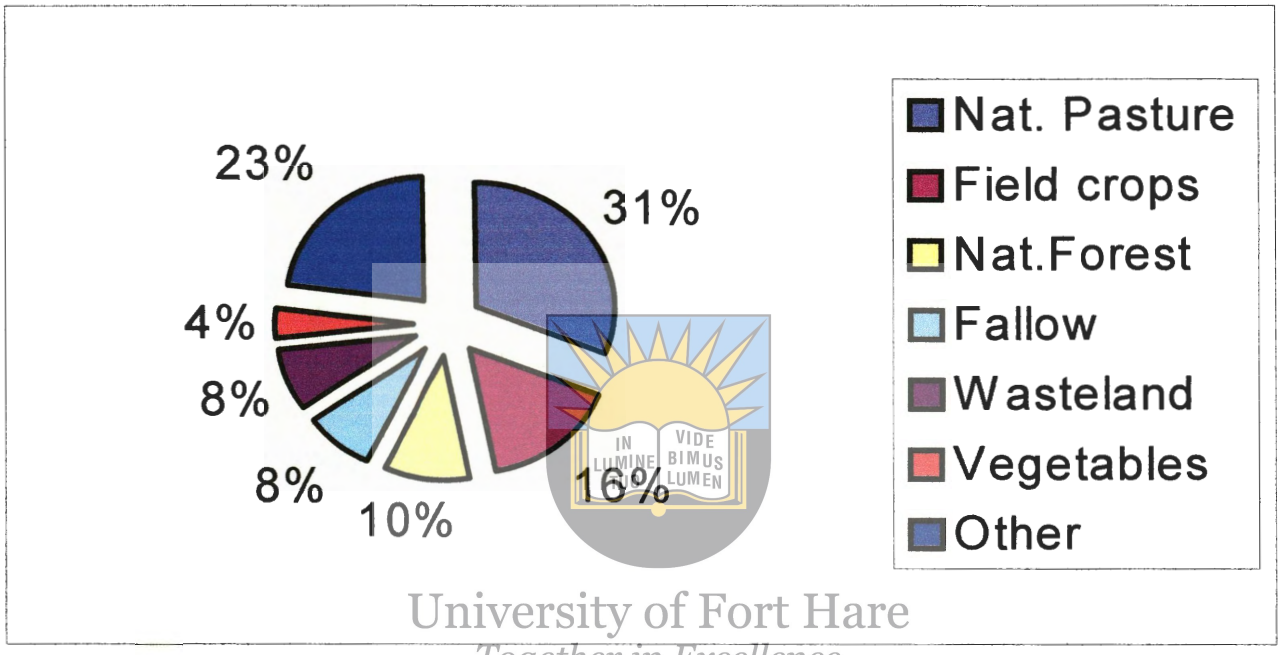


Figure 4. Proportion of land allocated to various uses by farmers in Transkei during 1997 (n=130)

The land use pattern (Figure 4) of these farmers indicates that overall 80% of the land was devoted to low intensity land uses. Only 20 % of total land was used for crop and vegetable production. The farmers further reported that more than a third of their land was devoted specifically to livestock production.

4.3.3 Residential occupancy patterns

Table 4.3.3 Residential occupancy patterns (n=135)

Types	Total number	Number connected to electricity
On farm residence	85	8
Farm buildings	49	4
Labourer housing	37	2
Off farm residence	50	12
No of farm buildings	24	4
Labourer housing	12	4

Source: Survey data (1997)

Interviewees were asked whether they resided on their farm enterprises or not. All 135 farmers responded to this question.

Eighty-five households resided on their farms. Of these households, eight were connected to electricity. Forty-nine of these households reported farm buildings, but only in four households were these connected to electricity. Thirty-seven households had labour housing, but only two of these were connected to electricity.

Fifty households resided off-farm, with 12 of these households connected to electricity. Of the 50 households, 24 had farm buildings but only 4 of these were connected to electricity. There were 12 off-farm households that had labour housing. In four cases this housing was connected to electricity.

4.4 HOUSEHOLD CHARACTERISTICS

4.4.1 Demography

Table 4.4 (a) Percentage number of farmers by gender (n=135)

No. of farmers	Percentage	Gender
96	71	m
36	27	f
3	2	no response
Total: 135	100	

Table 4.4 (b) Average age grouping per household

Age Category	Average Number
Less than 15 yrs	1.5
15-44 yrs	2.37
46-65 yrs	0.97
66 yrs and above	o.19

Table 4.4 (c) Income sources of respondents (n=135).

Number of farmers	Percentage	Income Source
67	50	Wages
13	10	Salary/wages/pension /grant
55	40	No income
Total: 135	100	

Of 135 farmers, 96 (71%) were male and 36 (27%) were female, 3 households did not answer. When asked about their occupation, approximately 72% (95) responded that they were farmers. Seventy eight percent of the respondents (103) were married. The size of the farmer- households ranged between 1 and 9; and the mean was 5. On average, households had 0.19 persons older than 65, 0.97 persons between the ages 45-65, 2.37 persons between the ages 15-44, and 1.5 persons below the age of 15. Information on farmers' level of education was not captured by the survey.

4.4.2. Sources of income

Sixty-seven (50%) farmer households earned salaries or wages. There were thirteen (10%) households that earned both salary/wages and pension/grants. Fifty-five (40%) households had no income from salary/wages or from pensions/grants.

Actual household income was not captured in the survey. However, respondents were asked to state their gross household income and estimate what proportion of their total household income came from this source (Table 4.4.1). Only 28% of those supplying information on this topic obtained 50% or more of their total household income from farming. Although many farmers did not provide information, it is nevertheless apparent that even among those who consider themselves commercial farmers other sources of income were important.

Table 4.4.1. Farm income as a proportion of total household income (n=92)

Proportion of income Derived from farm	Number*	%	Mean household income (R)
0 - 25 %	41	44.6	17 128
26 - 50 %	25	27.2	42 666
51 - 75 %	25	27.2	33 627
76 - 99 %	0	0	--
100 %	1	1.1	171 000
TOTAL	**92**	**100**	**62 752**

*43 respondents did not specify sources of income or total income

4.4.3 Farm labour

Limited information on the use of labour by Transkei commercial farmers was obtained. This included number of labourers used, their gender and whether their employment was occasional or full time. No information was requested regarding wage levels or kinship. A total of 104 responses were obtained.

Seventeen (16.3%) of responding farmers did not use labour at all, 41(39.4%) used one to five labourers, 23 (22.1%) used six to ten, and the remaining 23 used more than ten. Eighty of the 104 respondents used permanent labour, but half of them limited their number to three or fewer. Occasional labour was used by 40 of the

104 responding farmers only, but 15 of these employed 10 or more workers. Details on numbers, gender and employment status of farm labour for the different enterprise types are presented Table 4.4.3.

On average, responding farmers used 4.1 permanent labourers, 2.5 male and 1.6 female, and 3.8 occasional labourers, 1.8 male and 2.0 female. Farmers producing crops or vegetables tended to use more labour than livestock producers, and their labour force tended to be balanced in terms of gender. Producers of macro-livestock, on the other hand, showed a preference for male labour.

Use of hired labour, especially permanent labour, is one of the characteristics that differentiates commercial from subsistence farming. Our survey results show that the majority of the interviewed farmers employed permanent labour, a clear indication of the commercial objective of their enterprises.

Table 4.4.3. Use of permanent and occasional labour by Transkei farmers, 1996 (n=104)

Enterprise type*	No.	Mean number of permanent labourers			Mean number of occasional Labourers			Mean total number of labourers
		Male	Female	Total	Male	Female	Total	
1	15	0.8	0.7	1.5	0.0	0.7	0.7	2.1
2	11	3.6	2.3	5.9	2.0	2.2	4.2	10.1
3	13	2.2	0.2	2.4	0.8	0.9	1.7	4.1
4	14	2.6	3.6	6.3	2.3	2.3	4.6	10.9
5	1	4.0	9.0	13.0	0.0	0.0	0.0	13.0
6	1	0.0	.00	0.0	0.0	0.0	0.0	0.0
7	0	--	--	--	--	--	--	--
8	28	3.2	1.7	4.8	3.0	3.8	6.8	11.6
9	2	0.5	0.0	0.5	0.0	0.0	0.0	0.5
10	4	1.3	1.5	2.8	3.0	0.5	3.5	6.3
11	2	4.0	2.5	6.5	1.5	2.0	3.5	10.0
12	3	2.3	1.0	3.3	3.0	4.7	7.7	11.0
13	3	1.3	0.0	1.3	0.0	0.0	0.0	1.3
14	2	4.0	3.0	7.0	0.0	0.0	0.0	7.0
15	2	3.5	2.0	5.5	2.0	2.0	4.0	9.5
16	1	2.0	1.0	3.0	2.0	4.0	6.0	9.0
17	2	3.0	1.0	4.0	3.0	0.0	3.0	7.0
Total	104	2.5	1.6	4.1	1.8	2.0	3.8	7.9

* 1= poultry; 2=vegetables; 3=livestock; 4=crops; 5= crops & poultry; 6=pigs; 7=poultry & pigs; 8=livestock & pigs; 9=poultry & vegetables; 10=crops & vegetables; 11=fruits and vegetables; 12=livestock , pigs & crops; 14=livestock; poultry & pigs; 15=livestock & pigs; 16=crops, poultry & pigs; 17=livestock & poultry.

4.5 FARMERS' ORGANIZATIONS AND INFORMATION SOURCES

Out of 135 people interviewed, 114 (84%) indicated they were members of farmers' organizations. These organizations were principally local farmers' unions organized at the district level. No specific information was requested regarding affiliations with national organizations and few respondents provided such details.

Of the respondents 87 (64%) regularly read an agricultural magazine. Of these, 85 (98%) read the *Farmer's Weekly* and 2 (2%) read *Landbouweekblad*. This survey was conducted before the magazine *Land* was launched. Only 37 respondents stated they watched agricultural programmes on TV, of these 36 regularly watched *Agriforum*. The *Ezolimo* agricultural or farming programme on *Radio Xhosa* was regularly listened to by 110 (81%) of respondents.

Approximately 70 (52%) respondents had heard of AGRELEK. Of the 70, 16 heard from other farmers, 12 from farmers' field days, and 9 saw advertisements on T.V. Forty-seven respondents recognised AGRELEK as an organization that provides farmers with help regarding electricity, but many viewed it as an actual supplier of electricity for farmers.

As shown in Table 4.5 about 62% of the farmers ranked extension services as their most useful source of information for agricultural activities. Farmers' organisations ranked second and magazines ranked third. Other sources of information came in the fourth position and the radio was the fifth in the list.

Table 4.5. Ranking of information sources by farmers (1996) (n=128)

Most useful source of information	Number of respondents*	Proportion of Total (%)
Extension	79	61.7
Radio	4	3.1
Other farmers	0	0
Magazines	15	11.7
Farmers' organisations	23	18.0
Other	7	5.5
TOTAL	**128**	**100**

*Seven respondents did not specify information sources.

The most obvious finding from this study is that farmers ranked the extension services as the top informer as shown in Table 4.5. The study of extension services in the Eastern Cape by van Averbeke *et al* (1997) indicated that the role of extension is to establish an information system geared towards the adaptation and transfer of appropriate technology to the farmers as well as to provide advice with regard to the different agricultural enterprises and to carry out on-farm demonstrations of new technology. The findings show that there is still need for extension services among farmers.

The study has also revealed that farmer's organisations are the next useful source of information for their farming activities. There is still a need to encourage the use of visual aids, illustrated 'how to booklets and brochures' and radio to disseminate information as these information sources have been found to be lacking (Table 4.5).

4.6 ELECTRICAL ENERGY USE

Of the 20 respondents (see table 4.6.1) that were connected to electricity, nine were using electrical farm implements or technology at the time of the survey. Three of these were using pumps for irrigation purposes, as described in Section 4.7.1.1.3. Only three households used more than one electrical implement. Out of the 20 households that were connected to electricity, four reported problems with power failure, especially on rainy days.

Table 4.6. shows the type and number of electrical appliances used in respondents' houses.

Table 4.6. Types of electrical appliance in use in respondent houses(n=20)

Electrical Appliance	Stove	Iron	Heater	Kettle	Washing machine	Freezer
Number of households	15	16	9	14	5	15

The appliances that are reflected above have been found to be used by the respondents for domestic purposes. Five of the twenty households have been found to be using other forms of energy for cooking as opposed to the fifteen households that use electric stoves.

Table 4.6.1. Electrical implements/technology used on respondents' farms (1996)(n=20)

No. of Households	Electrical technology
3	Pumps for irrigation purposes
2	Mower
1	Welding machine Milking machine
1	Infra-red lights Incubator
1	Welding machine Hammermill Grinder
1	Infra-red lights
11	None

The respondents were asked to supply the names of the different equipment they have which utilises electrical power. It was found that there were only very few farmers that are in possession of such equipment as shown in table 4.6.1 only twenty seven percent of the farmers were in possession of one or another of such equipment.

4.7 FIELD CROPS, VEGETABLES AND FRUITS

In this report, field crops included maize, wheat, sunflowers, dry-beans and potatoes while vegetables included cabbages, spinach, pumpkins, tomatoes, butternuts, carrots, onions, beetroots, and turnips. The fruits included apples, peaches, plums, avocados, grapes and citrus.

4.7.1 Field crops and vegetable production

Eighty-five (63%) of the interviewed farmers were involved in producing one or more crops. Among crop producers, 35 (41 %) were growing a single crop. This was most frequently maize (21), followed by potatoes (12), beans (1) and cabbages (1). The other 50 (59%) grew two or more crops on their lands (Fig. 5).

4.7.1.1. Production practices

4.7.1.1.1. Choice of crops and areas planted Although the respondents reported growing 15 different crops, only seven were grown by more than two farmers (Fig. 6). The most popular crops were maize, potatoes, cabbages, dry beans and spinach. Except for cabbage and spinach these are all field crops that can be grown under dryland conditions.

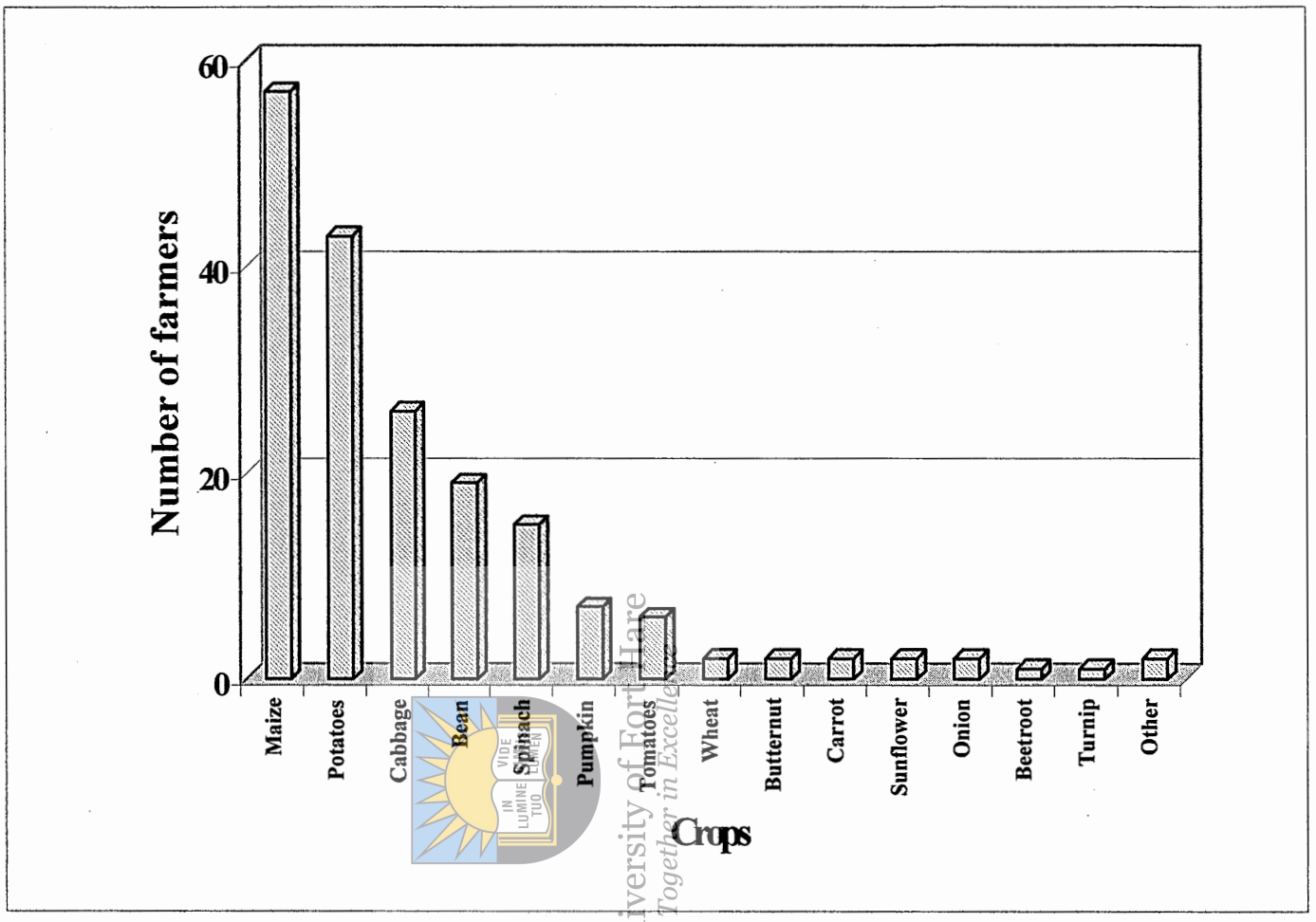


Figure 5 Frequency distribution of crops grown by Transkei farmers during 1996 (n=85)

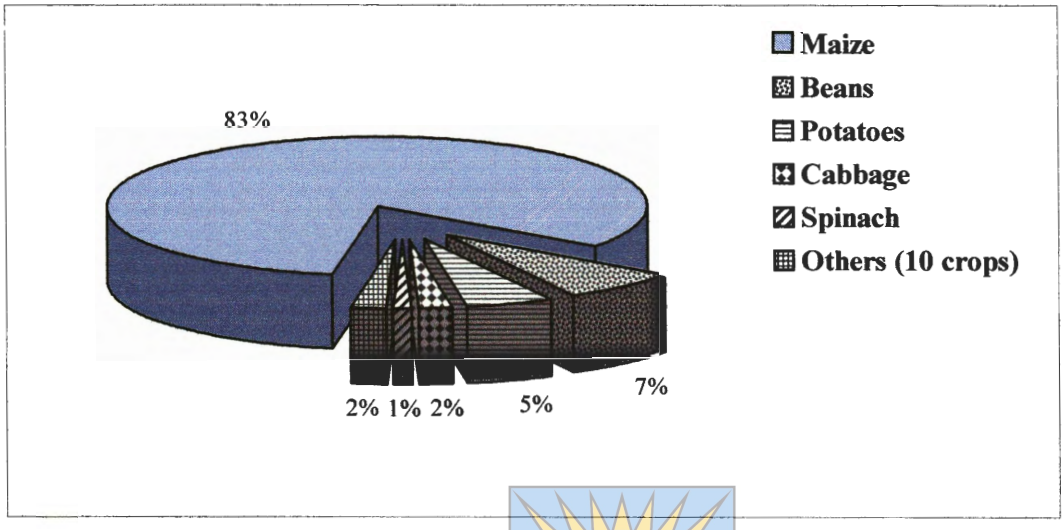


Figure 6 Percentage of area planted under various crops in Transkei during 1996

The areas planted to various crops varied widely. Of the total land allocated for crops (Fig. 6), 90 % was planted to maize and dry beans and the remaining 10 % was shared by 13 crops, including potatoes (Table 4.7). Out of the four percent total area devoted to vegetables (Figure 4), the study found that the greatest area was devoted to pumpkins. This could be due to pumpkins being able to withstand water stress better than cabbages. Of the crop land allocation mentioned earlier, (Figure 5) the ratio of field crops to vegetables was 4:1. However, the actual planted area (Figure 6) for different crops suggests that in practice field crops may be grown even in garden lands.

Table 4.7 Areas and yields of various crops grown by farmers in the Transkei during 1996 (n=85)

Crops	No of farmers	Area (ha)		No of farmers	Yield (tons per ha)	
	reporting crop areas	Mean	Range	Reporting yields	Mean	Range
Maize	42	26.2	0.3-184	42	0.52	0.04-14.0
Potatoes	43	2.28	0.05-20.0	31	1.37	0.00-17.28
Cabbages	26	1.30	0.05-6.0	21	1.99	0.00-12.0
Beans	20	6.72	0.25-75.0	11	0.27	0.05-1.9
Spinach	15	1.56	0.05-15.0	8	24.24	0.11-37.47
Pumpkins	7	2.33	0.5-6.0	4	0.17	0.13-0.33
Tomatoes	6	1.40	0.05-6.0	3	9.67	0.20-13.5
Wheat	2	2.40	0.8-4.0	2	2.27	0.50-2.63
Butternuts	2	0.88	0.75-1.0	1	0.17	--
Carrots	2	0.53	0.05-1.0	1	19.06	--
Sunflower	2	1.00	--	0	--	--
Onions	1	0.05	--	1	1.2	--
Beetroot	1	0.05	--	1	0.44	--
Turnips	1	1.00	--	1	10	--
Other	2	1.43	0.86-2.0	1	0.07	--

4.7.1.1.2. Farmer inputs

The first part of this section deals specifically with energy used in crop production and land preparation, the second includes all other agricultural inputs, namely, nutrient supply, planting material, water supply and plant protection.

4.7.1.1.3 Energy consumption

Energy consumption in crop production was mainly for operation of irrigation systems. Only 25 farmers had irrigation system on their farms. Among these 16 used energy to pump water. Nine farmers used diesel; four used petrol, and three used electricity. The mean cost per farmer using diesel fuel was R 7590 per annum (range R 780 to R 35 000). Users of electricity spent a mean of R

4518 per annum (range R 780 to R 9 125). The small number of respondents and lack of relevant details prevented further comparisons of various energy sources.

4.7.1.1.4 Land preparation - Only 68 of the 85 farmers provided information regarding land preparation. Of these, 84% reported use of a tractor, 11% used animal draft, and 6% used manual labour.

4.7.1.1.5 Other agricultural inputs

Nutrient supply - Farmers made use of both organic and chemical fertilizers. Among the users of organic fertilizers, 31 used kraal manure and 8 used compost. Only three applied sufficient manure to meet the estimated nutrient requirements of crops, namely 20 t per ha or more (van Averbeke & Yoganathan, 1997).

Of the 85 crop farmers, 65 % used chemical fertilizers. The fertilizer mixture of 2:3:2 (22) was used most frequently, followed by LAN and 2:3:4 (30). Only a few farmers used other types of chemical fertilizers. Almost 77 % of the time, chemical fertilizers were applied at rates of less than 500 kg per ha. The rate of

application on these fields was thus one-third or less of the recommended rate (FSSA, 1989).

Seeds - The majority (72 %) of the 85 farmers used commercial seeds; others used their own seeds. The reasons stated for use of commercial seed included higher yields (42 %); early maturity (20 %); better germination and strong seedlings (20 %); and chemical treatment and better keeping quality (18 %).

Water supply - Water sources for irrigation were available to 61 farmers; 49 of them reported that these sources were located within 1 km distance from their crop fields. Among the 61, 25 farmers had functional irrigation systems. The land area under irrigation ranged from 0.06 to 65 ha, and the mean was 8.5 ha. Among those farmers who made no use of a potential water source for irrigation, 28 mentioned lack of a pump or engine as the main reason, followed by great distance to water source (4), no electricity (1) and lack of advisory services (1).

Plant protection - Nearly two-thirds of crop farmers used chemicals to control pests and most of these (66 %) were used to control pests on maize crops only. Farmers mentioned 25 chemicals as means of controlling pests and diseases. But only two of these are considered effective in control of plant diseases (Bot *et al.*, 1988). This suggests that many chemicals were wasted and pest control methods were ineffective.

4.7.1.2. FARMER OUTPUTS

4.7.1.2.1. Crop yields Generally crop yields per unit of land were very low except for spinach and carrots (Table 4.7). These were high mainly due to the exceptionally high yields reported by a single farmer. The maximum yield of maize reported (16 t per ha) was also exceptional, (Averbeke & Marais, 1991), but the mean value was lower than dryland maize yields reported by the same authors.

Most vegetable yields were in a range of 15 to 60 t per ha , only a fraction of the optimum yields for these crops. These low yields were possibly due to depletion of plant nutrients.

4.7.1.2.2. Economic returns and marketing Almost all farmers sold their crops directly to consumers. The sale prices of their crops varied widely, especially for cabbages and onions. Generally, the prices obtained by respondents for their crops were comparable to formal market prices, except for tomatoes which were far lower.

Of twenty-one farmers who grew maize as their sole crop, mean gross cash income from this crop was approximately R 9 559. Twelve farmers grew only potatoes obtaining a mean gross cash income of approximately R 3 800 per year. Only 20 (24 %) of the 85 farmers obtained a gross cash income of more than R 10 000 from crop production (Table 4.7.1).

Table 4.7.1 Gross cash sales and sale prices for crops grown by farmers in Transkei during 1996.(n=85)

	Gross cash sales (R)		Sale price (R / ton)	
	Mean	Range	Mean	Range
Maize	9559	250-72000	1022	500-2000
Potatoes	3870	60-30000	1273	500-10000
Cabbage	2030	90-10000	1523	467-7500
Bean	3648	160-24050	3345	300-9000
Spinach	4300	150-33000	7714	5000-10000
Pumpkin	1389	150-5000	1494	150-3333
Tomatoes	34106	10-160000	866	400-1200
Wheat	5330	260-10400	825	650-1000
Butternut	240		800	
Carrot	10000	0.02-20000	2000	1000-3000
Sunflower	425	340-510		
Onion	67	10-125	1750	1000-2500
Beetroot	55	N/A	2500	N/A
Turnip	10000	N/A	1000	N/A
Other	195	N/A	900	N/A

Earlier on in chapter one of this study, agriculture was noted as the most important and crucial industry in most rural areas of South Africa. This is expected to remain so for many years to come. Agricultural production, which is the cornerstone of Transkei economy, shows a declining situation of food productivity per head. Crops that are produced in Transkei are mainly rainfed. The mean gross farm income of all farms was R21,196 where as in the whole of Eastern Cape it was found to be R180, 000. There has

also been a noticeable poor performance in the cropping enterprise. As indicated by Broel *et al* (1982) this poor performance is linked to a number of reasons including the following; lack of access to credit and financial subsidies or production loans, the small farms and non-viability of agricultural holdings, the inability of the rural farming sector to acquire appropriate production resources such as farming equipment, lack of adequate services and infrastructure such as access roads, irrigation water, energy sources, means of communication and commercial services. As revealed by these findings the former homeland farmers cannot produce enough to meet the requirements of its own population. Section 4.7 of this study together with tables 4.7 and 4.7.1 reflects the returns obtained from production and constraints facing these smallholder commercial farmers.

The low yields of staples as shown in Table 4.7 shows that the ordinary Transkei farmer is faced with several production constraints as indicated in chapter two of this study. Improvement in the performance of rural institutions such as marketing, credit facilities, research and extension and farmers support services could contribute greatly in improving agricultural productivity of smallholders in this area.

The World Bank report of 1994 indicates that in general, the yields from the small farm plots in the homelands are poor, and very little of the production is marketed. By contrast with commercial farming areas, roads are often poor, markets are distant, and marketing information is scanty. There is very little information on market demand and market requirements outside local area. Another problem can be in reaching and dealing with the South African marketing boards for products produced for markets outside the area and this is confirmed by the review in section 2.8 of the study.

4.8. FRUIT PRODUCTION

Only four farmers had fruit trees and only two mentioned pruning as an agricultural input. None provided information on yields or economic returns.

4.9 NORTH PONDOLAND SUGAR ASSOCIATION – BIZANA DISTRICT

4.9.1. Introduction

The plantation of the North Pondoland Sugar Association is situated in the Bizana District of the former Transkei (Fig. 4.1). The plantation lies on t he eastern side of Bizana town towards the Wild Coast Sun hotel and casino complex and is a major agricultural enterprise. It covers a total area of about 2400 ha and involves about 200 farmers, each with a land holding averaging 11 ha.

When contacted by the researcher for the study, the sugar farmers insisted that the researcher should assist them by communicating their constraints and problems to the Provincial MEC for Agriculture and Land Affairs. They were of the opinion that their case deserved special attention and should be of interest to any agency interested in supporting the development of commercial agriculture in the region, including AGRELEK. These farmers did not participate in the Phase two survey by answering the questionnaire. Thus in general the account provided below does not provide the same information as was captured in the survey.

4.9.2. Project history and current status

Before project initiation, the site formed part of a communal settlement area. When the potential of the area for sugar was identified the local community was approached by the Department of Agriculture and Forestry of Transkei with a view towards developing the area for this purpose. Consensus was reached between the community and government and residents agreed to move off the land earmarked for production and resettle outside this area. In return, the Transkei Government agreed to compensate households for the loss of buildings on their homesteads. The sugar project was launched in 1981 and the Transkei Agricultural Corporation (TRACOR) and Magwa Tea Corporation were appointed as implementing agents.

During its first five years the project operated as one large estate. In 1986 a decision was made to subdivide the estate into small-holdings of about 11 ha each, and according to the farmers the land was distributed among all former land right holders. In addition, an undisclosed number of farmers who did not have historical land rights on the project also were allocated land. At the time of our visit, there appeared to be a number of conflicts related to land rights, and it could be that not all people with historical land rights are now part of the scheme.

Each small-holding was allocated a reference number, which appeared on all transactions and records. At the time of the interview, the farmers had access to a centralised service Organisation consisting of a Project Manager, an Administrative Manager, a Workshop Manager, a Small Cane Growers

Development Officer, two Supervisors, a Head Clerk, eight Tractor Drivers, and eight Conductors. The farmers are organised and represented by means of an eight-member committee. The main function of this committee is to liase on behalf of the farmers with all the stakeholders involved in the sugar production enterprise.

Although they were able to make their own decisions on a number of issues, the sugar farmers were of the opinion that they still lacked the capacity to do so confidently because of a lack of training. For example, farmers were expected to decide on the type and amount of inputs but were not sure on how best to make such decisions. There was a strong feeling that the present service Organisation was not making enough effort to empower farmers, preventing them from reaching a stage where they would be to manage the project themselves when the time came. The farmers agreed that they did not want to do away with the present service Organisation, but expressed the wish to become closely involved in all aspects of project management. This included purchase of inputs, allocation of contracts, pricing of inputs, all aspects pertaining to sugar cane cartage, calculation of income tax and the way in which costs are to be charged to farmers by the scheme, to mention a few ways.

Farmers identified a number of specific concerns which they perceived as having a negative influence on the overall success of the project. These included:

- Farmers were not involved in the selection of suppliers to the scheme, a service Organisation responsibility. Farmers thought that they would benefit financially if they could

purchase directly from suppliers instead of using the service organization as an intermediary.

- Farmers wanted management training and exposure to decision-making processes followed by the service organization in preparation for the day that they would be required to manage the scheme themselves.
- Farmers felt that there was a lack of transparency on the part of the cartage contractors with respect to financial charges for their services.
- Farmers experienced drainage problems in many of their lands, causing fields to become waterlogged after heavy rains.
- The absence of irrigation was also seen as a limitation, because at times the sugar cane was subject to water stress. Farmers identified the Mzamba, Mtavuna and Hlolweni rivers as potential sources of irrigation water.

4.9.3 Energy use by the scheme

At the time of the survey the sugar scheme was relying principally on diesel fuel for its energy requirements. In 1996, the annual cost of diesel was R60 000. Farmers were of the opinion that with the provision of electricity, which was thought to be a cheaper source of energy, their operating costs could be cut tremendously. Electricity would also be required for pumping envisaged irrigation water. At the time of the survey, the nearest electricity line was about 15km from the project. The farmers had a strong feeling that provision of electricity could make life easier for them, especially in the operation of their farm machinery.

4.9.4. Productivity and financial returns

Although the farmers were actively engaged in sugar cane production, there was a deep feeling that the output and returns received from the produce were very low and needed to be increased to meet production costs and also benefit farmers. There were a number of contributing factors that were mentioned in this regard and amongst others, the following were pre-eminent:

- unavailability of irrigation water
- absence of electricity
- inadequate cartage machinery and loaders

The farmers stated that the yields from the North Pondoland Sugar Association project were very low compared to those of others growing the same crop. A yield of 75 tons of cane per ha was mentioned as the average yield. Farmers indicated that this yield varied depending on weather conditions. Although they did not recall specific yields obtained by farmers in Mpumalanga and KwaZulu-Natal for comparison, it was stated that from meetings they attended with their counterparts, the North Pondoland farmers were always stunned by the high average yields given by these farmers. According to the farmers the main reason for their poor performance was the poor quality and/or unavailability of extension services and professional advice.

4.10 GUBA FARMS-LADY FRERE, MALUTI, BUTTERWORTH, CALA AND PORT ST JOHNS.

4.10.1. Introduction

As part of "homeland consolidation" after 1976, formerly white owned farms were transferred to the Transkei Authorities. These released areas bolstered the then Transkei department of agriculture and forestry's strategy to develop commercial farming in Transkei.

The areas, as stated above, form part of those released areas where land was availed under the leasehold system to Transkei farmers. In 1983, the land was subdivided into 'economic units'. The recipients of the farms were mostly members of the local elite. The lessees on these farms retain the option to buy if the Department of Agriculture deems the farmer's performance satisfactorily while complying with various conditions.

Presently, the sale of farms have remained frozen in terms of a moratorium with respect to the sale of government land. However, the farmers expressed serious concerns on the condition of the farms and other infrastructure and social factors affecting the productivity of the farms.

The main reason why these farmers are grouped together was due to the fact that all of them were found to be sharing same constraints. They were almost all common to each other, let alone the situation of these areas.

4.10.2 INFRASTRUCTURE

4.10.2.1 Access roads

The farmers were concerned about the poor condition of the network of roads in the area. Most of the farms are inaccessible by car due to the poor condition of roads. Unfortunately, ever since the former white owners left the area, the network of roads between farms is in a critical condition. The owners themselves are battling to reach their farms. Their farms are only easily accessible by the main road, which cuts through them linking the neighbouring districts and basically used by the public transport. Several pleas have been made to the government to assist in this regard and all efforts have been unsuccessful.

4.10.2.2 Energy sources

There is no network of electricity power lines on the farms. The only network, which is found nearby, is in the neighbouring white owned farms. Those who use electricity generate it through diesel/petrol engines. The farmers unanimously expressed that the availability of electricity is the only solution to most of the problems they encounter. Electricity was seen as an asset that could help in processing their produce and to scare away the would-be thieves. They also mentioned that pumping costs and other cost that require power as a source of energy, could be reduced tremendously should this resource be made available.

4.10.2.3 Telephones

The farmers in the area are almost all cut off from the telecommunication system. The telephone wires are all dilapidated and have fallen into disuse. There was a great concern about the unavailability of these services more especially that the crime rate is so high and that most farmers have been targets of these attacks lately.

4.10.2.4 Fencing

The condition of fencing in almost all the farms is in a critical mess. Most of the fences are down and that result in animals straying other farmer's fields. The farmers find it difficult to spend money on repairing fences because of the kind of deal under-which they operate their farms. The agreement was that, if they fix any kind of infrastructure on the farm they can not expect to be compensated by the government. The farmers suggested that if the government is not prepared to sell these farms to them, an action needs to be taken to fix the fences. Alternatively farmers could do it themselves and costs refunded to them thereafter.

4.10.2.5 Water provision

Generally, most of the farms lack irrigation water and consequently depend on dryland farming. Some farmers had irrigation equipment that was inherited from the previous farmers. The need for irrigation water was expressed as one of the priorities and solutions to increased production.

4.10.2.6 Windmills

The windmills that are standing in disuse for quite a while now have been reported on several occasions to the government. The majority of them have been standing there for years now without being fixed.

4.10.2.7 The farms

As farms remain the property of the government, the farmers propose strongly that the government should hand over ownership to them. There were promises that farmers performance would be assessed and based on how they perform, then the government would consider selling the farms to the deserving farmers. The farmers expressed their frustration at the slow pace in which their concerns are taken care of by the government.

4.10.2.8 Farmer support centres

The absence of farmer support centres is making the load heavier for the farmers. They expressed that they rely on the white counterparts across the river for essential services. The inputs are scarce and they have to drive long distances for the assistance they need.

4.10.3. SOCIAL FACTORS

4.10.3.1 Tenants

The farms have a lot of tenants who were left there by their previous employers and have since established themselves and their families on these farms. Their presence is threatening the leases because they refuse to take instructions from them. Secondly, the theft rate is high and the government is doing absolutely nothing about it. The farmer finds himself compelled to share the resources like camps and arable land with the tenants. The farmers feel that such a situations disfavours them because they are expected to pay rent whilst there are people who enjoy free ride. Efforts have been made to approach the department on regarding the issue but were unfortunately all in vain.

4.10.3.2 Theft

Theft was cited as one of the major constraints to development in the area. The neighbouring communities who were resettled nearby are the prime suspects of this problem. The farmers also voiced out that the present government is very soft on crime and they feel that at some stage they will have to take the law into their own hands to address problems faced by the farming community

4.10.3.3 Vandalism

The property on these farms has experienced a lot of vandalism. Some of the farms have no occupants. The people around there simply come and vandalise the property and take away whatever

they need. The farmers mentioned that there is a committee of farmers that is in place which could be given powers by the government to look after the property and could also assist in the allocation of those deserted farms.

4.10.4 OTHER CONCERNS

4.10.4.1 Tenure system

The present tenure system does not charge anyone liable for whatever damage that could be incurred on the farm. The farmers themselves have no full authority of solving their own problems pertaining to land. The squatters that are found in their farms categorically tell them that they are not the owners and are therefore not prepared to obey them. Farmers find themselves in a situation that is actually discrediting them, as they have no full land rights to those farms.

The strong proposal was that the government should immediately transfer the land rights to those farmers who are prepared to purchase the land. For some farmers the 10-year lease agreement has lapsed. Those farmers have appealed to the government for the purchase of the farms but there is no response so far.

4.10.4.2 Credit facilities

Although there is a financing institution in the form of Agribank in Transkei, there are still complications that go with it. Before a farmer could get the loan, it was suggested that they should club together and that unity would serve as a security. Some farmers were therefore not comfortable in that regard. The farmers also feel that the interest rates are ruining their future instead of improving

their farming conditions. They find it impossible to emerge from the loans they get from the financing institutions.

4.10.4.3 Markets

The farmers were deeply concerned by the absence of proper marketing. They lack advice in that regard. Farmer's produce is at the end destroyed and damaged due to the unavailability of organised market.

4.10.4.4 Technical support services

There is a general lack of assistance from the government. The extension services are generally not at all available for black commercial farmers. The veterinary services are also absent and this result in high mortality rate and great reduction in livestock numbers.

4.10.4.5 Communication between farmer and the department

Generally, all the farmers have expressed the lack of communication between the government and the farmers. They mentioned that there is a general lack of transparency in the way in which the whole land issue is being addressed.

4.10.4.6 Sale of land

The farmers came up with a proposal that constitute a set of criteria for the sale of land to them by the government.

The original amount, which was attached to the farms, should not be taken as a basis for working out the price of the farm because these farms were never serviced.

The farmers, more especially in Maluti, mentioned that the amount of money which was invested with Agribank from the Development Bank of Southern Africa never reached the farmers more especially livestock farmers.

4.10.5 CONCLUSION

The mission here was to assess the need for electricity as a technology to improve agricultural productivity. The farmers rated the need for electric power to improve farming as of high priority. The expenses incurred in purchasing fuel for running engines on the farm was said to be ridiculously high compared to reasonable costs, which could be incurred when utilising electrical technology. But, it was also obvious that there are other related issues, which are facing the farmer's production environment. Such issues are related to infrastructure and the provision of financial aid. Another inhibiting factor was related to the tenure system in which the majority of farmers are operating under and the fast deteriorating state of affairs in farm infrastructure.

From the findings, it is apparent that in most of these government leased farms there are a lot of irregularities and breaches of the lease agreement. The most evident ones as also revealed by the 1995 LAPC report include;

majority of farmers are operating under and the fast deteriorating state of affairs in farm infrastructure.

From the findings, it is apparent that in most of these government leased farms there are a lot of irregularities and breaches of the lease agreement. The most evident ones as also revealed by the 1995 LAPC report include;

- Under utilisation of farms with large areas of arable land lying idle
- High incidence of farm dwellers who remained after transfer of farms
- Overstocking and severe overgrazing on some farms
- Poor infrastructure such as roads and fencing
- Inadequate farmer support services
- Uncoordinated activities of government departments and the fragmentation of responsibility
- Selection criteria for lessees were unrealistic
- Boundaries are sometimes not clearly demarcated
- The destruction of fences by neighbouring communities
- Stock theft which has become an endemic problem in the province

These revelations are also confirmed by section 2.8 of chapter two as factors that contribute to the poor performance of smallholder farmers in this region

4.11 MACRO-LIVESTOCK

4.11.1. Introduction

The inhabitants of rural Transkei are presumed to engage largely in subsistence agriculture. Subsistence agriculture in this context is used to mean smallscale farming with the intention of producing enough to feed household for the current season. A surplus may be produced to either sell for cash or to store for future household needs. The main focus of this study is aimed at identifying the commercial farmers who are operating on a smallscale basis and to identify the challenges that face these smallholders. The commercial sector takes it for granted that the objective of farming is to generate income through the marketing of produce. The findings have shown that there are a number of livestock farmers who have shifted from the old tradition of keeping livestock for traditional ceremonies but for the market as well. Because of the general environment factors already mentioned in chapter two, the Transkei region is better suited to livestock rather than crop production.

To realise the potential of livestock production, water and basic nutrition are the essentials. Coupled with nutrition is animal management and disease control. The study found that most animal practices such as provision of winter supplementary feeding to prevent mortality were not adopted by the farmers. Only 2% of the farmers indicated the use of supplements. Supplementation of grazing animals is critical to successful livestock production under South African conditions. Throughout this study, there has been no indication of a planned fodder flow programme based on veld management and supplementation (licks, animal feeds, forage production). With the exception of simple management practices such as inoculations and dipping which were applied by about 82% of farmers, other management practices were such

as control of internal parasites were adopted by only a small minority of farmers.

Data on sheep production showed considerable scope for improving wool production through improved nutrition and management. Livestock sales have yielded high returns compared to other livestock products. The record keeping aspect has been found to be deficient amongst farmers. Farmers relied on memory and this aspect makes it very difficult to monitor cash incomes and livestock losses. The study has shown that the record keeping aspect does not play a significant role amongst Transkei farmers.

The study also shows that marketing is mostly done informally by the farmers. They sell directly to the public and in that way they avoid costs such as transport and marketing commission.

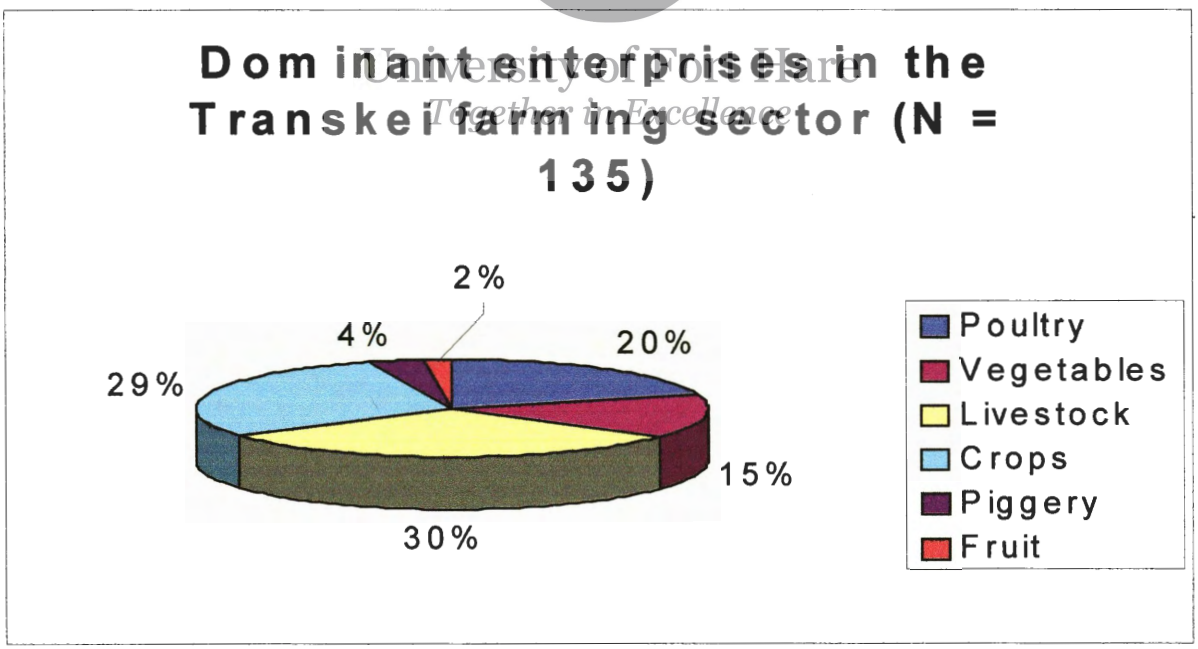


Figure 7: Dominant enterprises in the Transkei farming sector (n =135)

The study has also shown that livestock is a dominant enterprise (30%) in the region followed by crops (29%) and then poultry (20%) as shown in figure 7.

The study has also shown that livestock is a dominant enterprise (30%) in the region followed by crops (29%) and then poultry (20%) as shown in figure 7.

4.11.2 Livestock numbers and their distribution

The findings from table 4.11 show that the farmers in the study area keep cattle, sheep and goats amongst the macro livestock. Horses, donkeys and mules were not evident in the study. It is evident that most livestock farmers kept more than one category of livestock as revealed by Table 4.11. The study also shows that out of the sampled number of farmers, only fifty eight were found to be keeping livestock. The data contained in table 4.11 shows that 43% of the farmers kept sheep, goats and cattle, 29% cattle and sheep, 19% cattle only, 4% sheep only, and 5% kept cattle and goats as shown in figure 7, livestock is one of the major agricultural activities that dominate farming in the Transkei.

Table 4.11. Livestock mixes farmed by commercial farmers in Transkei, 1996 (n = 58)

Livestock enterprise	No. of respondents	Proportion of total (%)
Cattle only	11	19
Sheep only	2	4
Cattle & sheep	17	29
Cattle & goats	3	5
Cattle, sheep & goats	25	43
Total	**58**	**100**

Source: Mbuti and Bediako (1999)

Both tables 4.11.1 and 4.11.2 show high sheep figures and this is a clear indication that sheep farming dominates the livestock enterprise in the study area.

Traditionally owned cattle, sheep and goats may be regarded as amongst the largest resources in the rural areas of Transkei, and according to the data from this study, they make a relative economic contribution to the economy (Table4.11.5). The assumption has been that the ordinary Transkei farmer keeps livestock for customary reasons. Table 4.11.3 shows that the offtake from farms is as a result of commercial and cultural reasons. According to de Lange *et al (1994)*, this multiple role of cattle is also reflected in the offtake rate, which is lower than commercial herds and involves removals other than sales, such as slaughter for social or cultural reasons, and the transfer of animals as part of dowry exchanges. The livestock numbers which were removed, either for commercial purposes or cultural reasons, comprised 16,5% which was slightly lower than the average offtake rate of about 20% in commercial herds in the Eastern Cape[1] (Antrobus, *et al*. 1994) but substantially higher than rates in the Eastern Cape communal production sector. The studies conducted in Ciskei (Fraser and Antrobus, 1988) and in Transkei (Bembridge, 1988) reported that the offtake rate in communal areas was about 3% and 6% respectively. The smallholder commercial sector as shown by this study revealed that the Transkei smallholder farmers are more commercially orientated because the rate of offtake is shown to be 90% through sales.

Table 4.11.1 Livestock numbers held by commercial farmers in Transkei (1996, n = 58)

Livestock category	Total	Mean/farm	Min.	Max.
Cattle	4292	77	6	690
Sheep	6962	158	3	920
Goats	1865	67	15	200

Source: Mbuti and Bediako

Table 4.11.2: Current livestock figures 1996

Livestock category	Number (head)
Cattle	1 467 880
Sheep	2 457 924
Goats	1 962 569
Pigs	307 537
Horses	83 532
Donkeys/Mules	22 582

Source: Department of Agriculture-Umtata (1996)

4.11.3 The management of livestock

The management of livestock in Transkei is characterised by many irregularities as shown by the results of this study. The objective of commercial farming is to generate income. Livestock in many ways substitute for a cash economy. Like money on deposit, they increase and multiply, at little cost to the owner, and they have an inbuilt hedge against inflation (Bembridge, 1984). To be able to produce high quality livestock, it means proper health monitoring, keeping of records, and

supplementary feeding. Most livestock owners have no clearly defined concept of farming for benefit. Stock losses are accepted as being part of life.

The survey results suggest that systematic monitoring of livestock is not common practise among the Transkei commercial farmers. Only 22% were found to be monitoring animal condition and 9% monitored animal health. According to the Standard Bank Report of 1988, it is stated that management practices such as disease treatment, parasite control, selective breeding, balancing nutrition, branding and dehorning are part of a common routine.

Disease control may be associated with deficiencies in nutrition and management. Coupled with management is basic animal management and disease control. Health care in the form of dipping against tick infestations is the one intervention relatively widely practised. Over the years the department of agriculture has instituted compulsory dipping programmes which are relatively well adhered to. In contrast to the control of external parasites, vaccination programme is not as well understood and therefore very poorly supported more especially in the communal sector. The results of this study show that the perception has changed as it shows that vaccination and dipping (82%) were the most common health control practices among farmers. Very few of the farmers used veterinary services and medicines (5%).

As indicated in the introductory section of this section, the supplementation of grazing animals is critical to successful livestock production under South African conditions. Seventy four percent of the interviewees have indicated that they use natural grazing as the major source of animal feed. Supplementary feeding was found to be infrequent. As much as it would be expected that cultivated pastures, fodder crops, such as silage and hay, would be indicated as a source of supplementary feeding, there was not a single case where such were

used amongst the farmers. It is therefore clear that natural grazing is the basis of livestock nutrition in Transkei.

Farm records among the interviewees were found to be very much irregular. A lot of records that are supposed to be kept by commercial farmers such as production inputs, physical inventory, physical production and labour records were found to be missing among the interviewees. Very few farmers kept records. A few of them kept milk production records (37.5%), some of them kept records of mortalities and births(28%), 33% recorded income and expenditure, 12% recorded livestock numbers and only 3% recorded medicines administered to livestock.

According to the LAPC report (1985) the health care practices in the form of dipping against tick infestation is the one intervention relatively widely practised. In contrast to the control of external parasites, the vaccination programme is not as well understood and therefore very poorly supported. As shown in section 4.11.3.1, vaccination and dipping were the most common health control practices applied by 82% of the farmers. The veterinary services have been found to be under utilised, only 5% of the farmers reported the use of such services.

4.11.4 ECONOMIC BENEFITS OF LIVESTOCK

The commercial sector takes it for granted that the objective of farming is to generate income through the marketing of produce. This is not the case in the communal sector. Livestock, especially cattle, in many ways substitute for a cash economy. Like money on deposit, they increase and multiply, at little cost to the owner, and they have an in-built hedge against inflation (Bembridge 1984). They have the added advantage of conferring status and security to the owner. Under these circumstances it is to be expected that domestic uses of livestock (milk, ceremonial slaughter, draught, meat consumption, insurance) will predominate over

cash sales. Typically, 10 to 20% are sold for cash, the rest being slaughtered for ceremonial purposes or for consumption (LAPC 1995). This study has shown that most of the off-take in cattle herds of commercial farmers in Transkei was by means of sales (91%) as shown in Table 4.11.3 indicating a high degree of market orientation. The sale of animals as shown in table 4.11.3 was the main source of income. Livestock products combined with the sale of livestock yielded a total amount of R1 838 878. The livestock products that were sold included hides and skins, wool and milk. Goats and sheep were not milked. Sale from animal products contributed about 8.2% of the total sales. The study has also found that the Transkei commercial farmer relied strongly on informal market for the sale of their livestock and livestock products. In almost all cases their market outlet was directly to the public. The data in Table 4.11.6 shows a comparison between the Eastern Cape and the Transkei commercial farmer livestock prices. This comparison reveals that livestock prices from the Transkei were slightly lower than those of their Eastern Cape counterparts, except sheep. In the Eastern Cape, farmers sell mostly to abattoirs, co-operatives and marketing agents (King, 1998, pers. Comm[2]).

The study has also found that health precautions were not properly observed in the milking parlours by some of the farmers. From the fifteen farmers that were milking their cows, only 10.3% of them took precautions against diseases in the parlour and only 8.6% cleaned the parlour with disinfectants before milking. The farmers sold their milk directly to the public untested. Milk production and sales are shown in table 4.11.4. The Transkei commercial livestock farmers managed to raise a mean gross income of R34 318 as shown in Table 4.11.5. The results in this table are compared to the 1991 results of the Eastern Cape statistics as these were the only results available at the time of this

Table 4.11.3 Production characteristics of commercial livestock enterprises in Transkei (1996) (n=58)

Production data	Cattle	Sheep	Goats
Livestock numbers			
All farms	4 292	6 962	1 865
Mean per farm	77	158	67
Range	(6 - 690)	(3 - 920)	(15 - 200)
Offtake (units)			
All farms	708	1481	677
Mean per farm	13	37	24
Range	(0 - 80)	(0 - 260)	(0 - 200)
Sales (units)			
All farms	646	1181	559
Mean per farm	12	27	20
Range	(0 - 80)	(0 - 260)	(0 - 200)
Gross cash sales (R)			
All farms	1 069 776	393 273	213 538
Mean per farm	19 103	8 938	7 626
Range	(1 400 - 136 000)	(600 - 78 000)	(1 050 - 70 000)
Price per animal (R)			
Mean	1 656	333	382
Range	(500 - 2 500)	(30 - 1 800)	(145 - 600)
Mortalities (units)			
All farms	148	483	86
Mean per farm	3	17	9
Range	(1 - 28)	(2 - 120)	(2 - 25)

Source: Field survey (1996)

Table 4.11.4 Milk production by commercial farmers in Transkei (1996) (n=15)

	Milk produced (l)	Milk sold (l)	Price (R)	Total cash sales (R)
All farmers (n=15)	151 966	130 018	1.80	234 032
Mean	10 131	10 001	1.80	18 002
Range	548 - 43 800	500 - 43 800	1.80	1 250 - 52 560

Source: Mbuti and Bediako (1999)

Table 4.11.5 Size and gross income of commercial farming units with macro-livestock in Transkei (1996) and East Cape (1991)

	East Cape *	Transkei **
Mean farm size (ha)	1 789	229
Gross income / farm (R)	168 303	34 318
Gross income / ha (R)	94.08	149.86

* Central Statistical Services(1991)

** Field survey

Table 4.11.6 On-hoof prices of livestock in East Cape (1998) and Transkei (1996)

Type	East Cape*	Transkei**
Cattle	1 950	1 656
Sheep	309	333
Goats	439	382

* Information supplied by the Dohne ADC (1998).

**Field study

4.12. MICRO-LIVESTOCK

Micro-livestock in this study refers to poultry and piggery enterprises. The GIS results have revealed that poultry is the third enterprise that dominates the region (20%). Piggery accounted for only 4%. In figure 2 which shows the different enterprise combinations, 18% of the interviewed farmers indicated that they are involved in poultry production. The study has found that approximately 51% of the farmers buy their chickens from the co-operatives wheras 26% of the farmers indicated that they buy them from other farmers (Fig.9).

The piggery enterprise is dominated by the large white. Sixty percent of the farmers that farm with pigs indicated that they keep large white, fourty percent of them indicated that they keep landrace. The indigenous breeds and other breeds accounted for 7% respectively.

The study shows that in this category of livestock, the management practices have been well adhered to. The only aspect which is lacking in the management of both micro and macro-enterprises is the keeping of records. Farmers have been found to be very much neglectful in the keeping of farm records. The results below gives a break down of the findings on each category of micro-livestock and its management practices.

4.12.1 Poultry

Poultry production, both for eggs and meat-production, has been common on the domestic scene in Transkei for many years. Chicken production in Transkei has expanded in recent years. Raising commercial birds in the rural areas can be a paying proposition, and within the means of small-scale farmers while utilising locally available resources such as crop by-products (Frye and Gessell-Frye, 1982)

The chicken farming, amongst the forty three farmers that were interviewed, was found to be dominated by the dual-purpose breeds. The dual-purpose breeds are relatively disease-resistant, give good carcasses on slaughter and have fair egg production (Macdonald and Low, 1994) Figure 8 shows that white broilers were dominant amongst the chicken categories kept by farmers. Rhode Island Red and Playmouth Rock were the second highest breeds respectively (16%) after broilers. The Table below (4.12.1) gives a breakdown of the different categories and chicken numbers owned by the forty three farmers interviewed. This Table (4.12.1) shows that broilers account for the highest percentage

Farmers have indicated a great difficulty in obtaining chickens. Amongst other constraints, transport is the major one. The extension officers were cited as being of great assistance in transporting chickens from the buying point. About 51% of the farmers indicated that they buy their chickens from co-operatives as shown in figure 9. The second most popular source was found to be other farmers (26%).

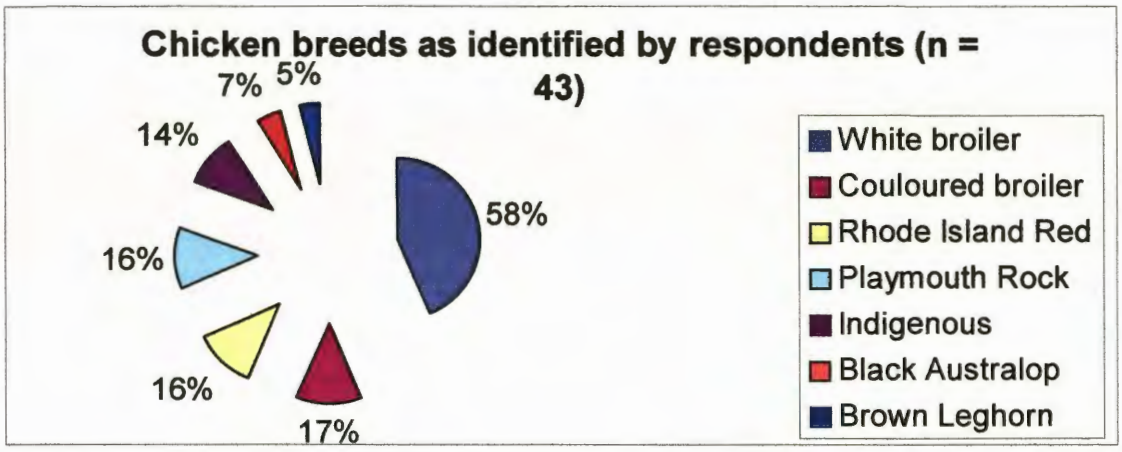


Figure 8: Chicken breeds as identified by respondents in 1996(n = 43)

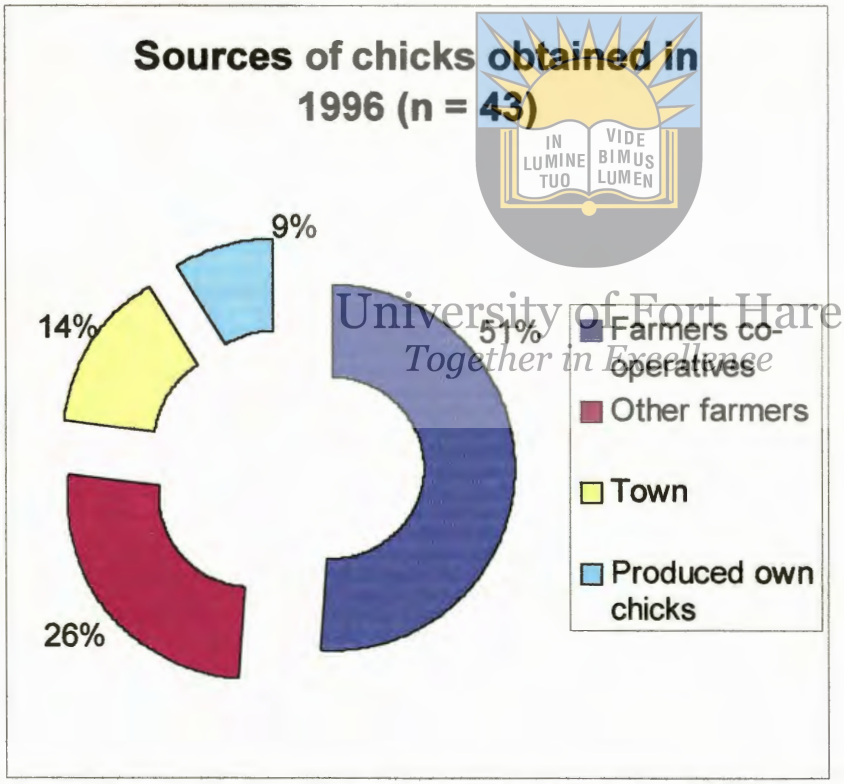


Figure 9 Sources of chickens obtained in 1996 (n=43)

Table 4.12.1. Number of chickens owned by respondents in 1996 (n = 43)

Enterprise	Number of respondents	Percentage (%)	Mean no. per respondent	Range	Total owned
Broilers	18	42	266	4 - 3 000	13 293
Layers	9	21	23	13 – 400	1 126
Dual purpose	13	30	38	14 - 1 000	1 884
Other	3	7	3	30 – 100	169
Total	43	100	330		16 472

Source: Mafu (1999)

4.12.1.2 Poultry housing and bedding

The majority of farmers (60%) used solid material such as cement blocks for housing and for roofing, they used corrugated iron. Mud bricks were used (23%) and some farmers used timber or combined timber and mud. Bedding was mostly made up of wood shavings and sawdust as indicated by most farmers(61%). This source of bedding was found to be readily available as the farmers indicated that it was obtained free of charge from the nearby sawmills. Grass accounted for 20% of cases who used it for bedding. This form of bedding was also accessed easily from the veld. Some farmers indicated that the use of grass was not recommended as it carries with it ticks that might affect the chickens.

Although bedding was provided by most farmers, heating was also found to be one of the most important need for the survival of poultry during cold weather conditions. The respondents indicated that they used

paraffin (48%) to heat poultry houses, others (20%) indicated that they used gas, 11% of them indicated that they either use electricity or firewood. The remaining 20% did not use any form of heating. All the poultry producers indicated that electricity could improve the poultry production if it could be available. Fourie (1995) indicated that provision of electricity at low, off-peak tariffs reduces costs, as heating is usually needed during the night. Gas was found to be the most expensive source of energy, the users spent almost R10 000 per annum for heating the poultry houses.

4.12.1.3 Poultry management practices

The study shows that the interviewees are more commercialised in poultry management. The different commercial feeds that they use are an indication that there is a realisation amongst farmers that commercial breeds need commercial feeds. For those who keep broilers, they observed the three phases of broiler feeds. Sixty six percent of the farmers used the broiler starter, 66% used broiler grower and 57% fed with broiler finisher and also crushed maize after six weeks to save on feeding costs. The feeding systems consisted of feeding poultry *ad libitum* (38%) and 59% restricted feeding to specified quantities at specific times of the day.

The monitoring of poultry is very remarkable compared to that of cattle, sheep and goats. Records were seldom kept in macro-livestock as indicated by this study. The absence of record keeping is often the deficiency of smallholder farmers and it is not encouraging that even those people who regard themselves as commercial farmers show such poor record keeping. Table 4.12.3 shows the kinds of records that were kept by the poultry farmers.

The sale from chickens contributed an average of R6 817.74 per annum and eggs yielded an average of R333 per annum. The marketing of

chickens was made directly to the public. The health management system was simple by observation and the study has shown that for poultry there are obvious indications that showed that the birds are not healthy. The drooping wings, lack of appetite, appearance of the feathers and their outward behaviour were cited as some of the indicators of poor health in poultry. Once these aspects become noticeable, the farmers indicated that the practices as indicated in Table 4.12.2 would be applied. Farmers are aware that precautionary measures against bacterial infection in the poultry house needed to be taken care of. To achieve this objective, study showed that all entrants into the poultry house needed to deep their feet in a foot bath placed at the entrance. Precautionary measures against New Castle diseases were also taken by providing vaccines against this disease. It also came from the findings that farmers were providing vitamins to chicks when they arrive to counteract stress. To ensure proper health management, the farmers indicated that they regularly change sawdust to avoid damp bedding.

Table 4.12.2 Practices used to maintain chicken health (n = 43)

Practice	Proportion of respondents (%)
Vaccination	70
Medicines	91
Vitamins at arrival	74
Other	60

Source: Mafu (1999)

Table 4.12.3 Poultry Records kept by farmers (n = 21)

Items recorded	Proportion of respondents (%)
Birth and mortalities	**76**
Expenditure	**10**
Income and expenditure	**14**

Source: Mafu (1999)

4.12.2 PIGGERY

According to Bembridge (1984), pigs in the Transkei were used almost exclusively for home consumption, virtually no management being involved. He further says that with good management, pig production can undoubtedly play an important economic role in an integrated farming system in Transkei.

The study shows that from the total number of respondents, only fifteen farmed with pigs. The results show that the majority of farmers were farming with commercial breeds such as the Large White and Land Race figure .12. The percentage of indigenous breed owners was very low (7%). One would have expected to find a high number of indigenous breed owners since they are known to be very resistant to diseases and heat stress. Cross breeding with indigenous breed produces an improved breed which is hardy, resistant to diseases and an improved carcass.

The study showed that pigs were fed with commercial feeds. Feeds such as pig starters, pig grower and pig finisher formed the major part of the diet for pigs. The other forms of feed such as pigswill and crushed maize were fed to pigs by about 27% of the respondents

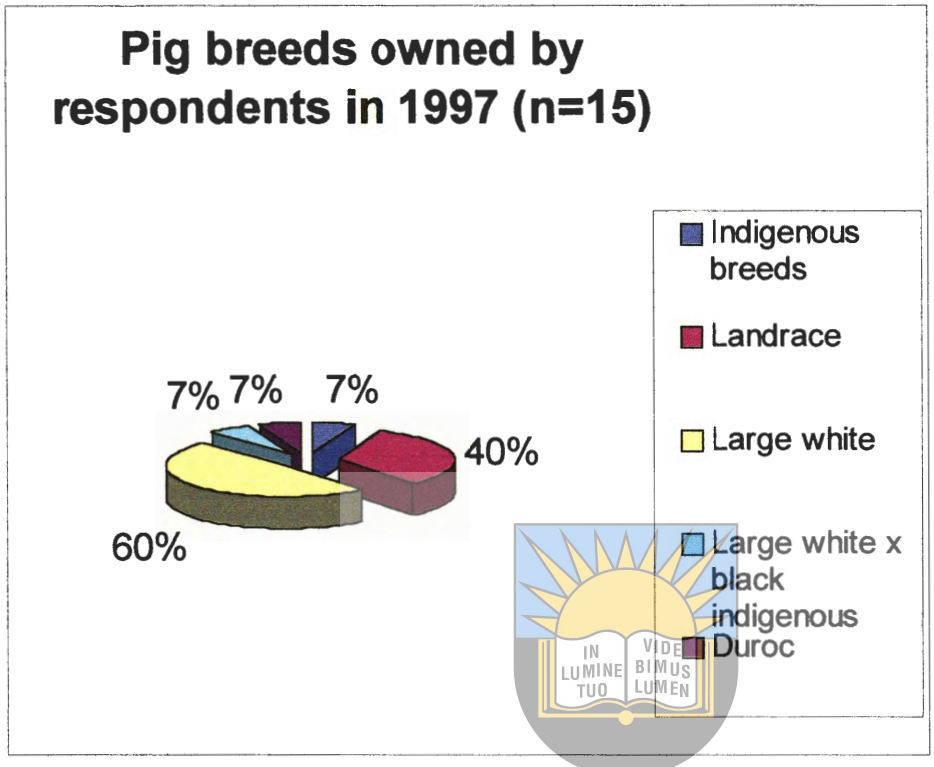


Figure 10: Pig breeds owned by respondents in 1997 (n = 15)

Health management was also adopted by the respondents, 73% of them used conventional medicines and 60% of them used vaccines. Other forms of medication were also used. The sale of pigs, like all other livestock categories, were sold directly to the public except for two of the farmers. The average gross cash sales of pigs per farmer was R3 707 per in 1996.

a result, some farmers made use of very labour intensive production practices, such as animal-drawn land preparation and the use of kraal manure as a fertiliser. At present, these practices may suit conditions very well, providing a high degree of self-reliance among farmers and limiting expenditure on external inputs.

The remoteness of much of Transkei and other factors made farmers to rely mainly on local markets. By doing so it appeared that they were filling a niche-market, enabling them to obtain fairly good prices for their products. Access to secure land, information, and services such as electricity was generally not available. These are limiting factors that prevent farmers from improving their productivity. A factor requiring urgent attention was the absence of fodder-flow programmes among livestock farmers. In other areas, such as the East cape region, these programmes involve the production of fodder crops to supplement the natural grazing during winter, enabling farmers to maintain the condition of their herds during this period. In Transkei, where most of the vegetation consist of sour-veld known for its low palatability in winter, the introduction of fodder crop production has the potential to greatly enhance the productivity of livestock enterprises.

Table 4.13 Comparison of commercial farmers elsewhere in South Africa with Transkei farmers

Factors of production	Commercial farmers elsewhere in South Africa	Commercial farmers in Transkei (this study)
Land		
Size	Have access to more land[1] Average farm sizes are 887 ha in Natal[2] and 1576 ha in the E. Cape[3] Average sizes of vegetable farms are 467 ha in the E. Cape[3] and 530 ha in KwaZulu-Natal[4]	Access to additional land restricted. Average farm size was 117 ha. Average vegetable farm size was 35.9 ha.
Ownership	In the E. Cape 85% of land is owner-farmed and 14% rented[5], and in Natal 86% of farms are owner-farmed and 11.4% are rented[2]. In Kwazulu -Natal 82% of farms are freehold[4].	39.5% of farms on tribal land, 38.5% on leased state land. Only 10.3% of farms are freehold.
Use	Dominant land use is livestock production[5] Livestock farms average 1647 ha[3] Often dry conditions (Karoo) and low carrying capacity[3] Livestock supported by fodder production[6] In East Cape crop production very limited and often under irrigation[3]	Dominant land use is also livestock production Mean size of livestock farms was 229 ha Usually wet conditions and fairly high carrying capacity. No fodder production Crops mainly rainfed production of staples, i.e. maize and potatoes.
Labour		
	13 workers per farm in the E. Cape[5]	4.1 permanent and 3.8 occasional workers per farmer. Not all use labour.
Capital		
Inputs	High degree of mechanisation[7]	Little capital investment; electrical technology largely absent; 84% plough with tractors, 11% with animals.
Sales	Active marketing often using intermediaries[7]	Sales predominantly direct to consumers.
Income	Average gross income of vegetable farms in KwaZulu-Natal was R16 303 per ha[4] Mean gross farm income in E. Cape was R180000[5]	Average gross income from vegetables was R595 per ha. Mean gross farm income of all farms was R21 196
Management		
Information	Used radio and magazines for agricultural information[1].	Same.
Records	Typical farmer in Natal spends 4.4 hrs per week on farm record keeping[2]	No data on time expenditure but surveys suggests few or no records kept.
Marketing	Used formal marketing channels[1]	More informal in marketing products.

[1] Makhura *et al.*, (1996); [2] Woodburn *et al.*, (1994); [3] Antrobus *et al.*, (1994); [4] Bullock *et al.*,(1994); [5] Central Statistical Services (CSS) (1991); [6]van Averbeke and De Lange (1995); [7]van Zyl (1995)

Energy use by farmers was mainly by means of sources other than electricity. In most cases the use of electricity was not possible because it was not available at the time of the survey. The rapid electrification of Transkei by Eskom that has taken place since then should present farmers with a new alternative. All farmers that were interviewed expressed great interest in the use of electricity and were keen to obtain information on its potential use in their farming enterprises. At present, the number of commercial farmers in Transkei may still be limited, but the potential of commercialising some of the farming on communal land are tremendous, and there is evidence of interest among subsistence farmers in getting at least partly engaged in commercial enterprises. This presents AGRELEK with excellent opportunity to contribute to such a process by expanding its information supply to the farming communities in Transkei.

CHAPTER 5

5. SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter reveals findings that support the literature reviewed on the constraints and characteristics of the Transkei small-holder commercial farmer. The summary, conclusions and recommendations as deduced from the findings, are in line with literature review as indicated in the second chapter. The research method that was used gave reasonably reliable indications of the present situation as confronting the small-holder commercial farmer.

5.1 SUMMARY

It has long been recognised that the Transkei region possesses good agricultural potential as a result of relatively high annual rainfall and generally favourable soils. Nevertheless for a variety of historical and cultural reasons commercial agriculture has not developed to this potential. These limiting factors include the land tenure systems, historical importance of labour out migration and remittances, and unrealistic past government policies. The infrastructure, including electrification, needed for conventional commercial agriculture has been generally lacking. With a total population of about 3.5 million, most of whom live in rural areas, Transkei is a net importer of agricultural products, including maize, and agricultural income provides only a tiny proportion of total household income.

Despite this general situation being understood very little was known about commercial agriculture in Transkei and how they operate under existing conditions. The study which was commissioned by AGRELEK in 1996 assisted in conducting a survey of commercial agricultural activities in the Transkei region of the Eastern Cape Province. In general, the researcher used a data gathering strategy that encouraged all commercial farmers to come forward and identify themselves. As a result of wide publicity approximately 300 farm households were identified. Subsequently, 135 households were included in a survey and answered questions contained in a questionnaire that was developed. The survey results obtained from these 135 households provided the principal information source to this study. Parastatals such as Ncora, Qamata, and Magwa Tea, were not included in the survey.

A data base for use in GIS showing the location of all farm enterprises identified in the survey has been captured. Each of these enterprises was categorised as belonging to one of 16 enterprise types, depending upon the nature of their agricultural production. Most frequent were enterprises that combined macro-livestock (cattle, sheep or goats) and field crops, followed by poultry enterprises. Macro-livestock production was involved in 42% of these enterprises and accounted for 50% or more of gross cash sales in about the same proportion of enterprises, indicating the dominant commercial and cultural role of these livestock in Transkei.

Micro-livestock (poultry and pigs) comprised the dominant production class in about one fourth of the enterprises, field crops and vegetables were dominant in 20% and 11% respectively.

Land tenure status has great implications for agricultural investment and development in Transkei. Of 128 farm enterprises only 14 (11%) owned their own farm lands, 39% were farming on leased lands, and an equal proportion were located on communal lands. However, leased lands, represented about 88% of the total land area occupied by these farmers. The size of these farm enterprises ranged from 0.02 ha (a poultry enterprise) to 900 ha. More than one third of the total of nearly 16 000 ha was used specifically for livestock production and 20% devoted to crops and vegetables. The remainder included fallow, forest, wasteland and unspecified land uses.

Of 135 reporting farmers, 71% were male and the households had income from salaries or wages and only 28% reported that 50% or more of total household income was derived from agricultural sources.

Despite the importance of non-agricultural income for most farmers, the majority of them employed one or more permanent labourers (average of four) and many also hired occasional labourers. The substantial use of labour clearly confirms the commercial nature of these enterprises.

Only about 15% of the interviewed farmers had electricity to their residences. Electrification of other farm buildings, including housing for farm labourers, was even less frequent. Use of electrical power for farming activities was very rare, only nine farmers reported use of any type of electrically powered implements or devices in their enterprises.

When asked about their sources of information on agricultural topics, 73% of respondents reported extension sources to be most useful while 27% considered radio programmes to be more useful. Agricultural programmes on television were regularly watched by only 27%, while 81% regularly listened to the Ezolimo programme on Radio Mhlobo Wenene. Eighty-seven farmers regularly read an agricultural magazine (Farmers Weekly) in all but two cases. Seventy respondents (52%) had heard of AGRELEK and 47 recognised it as an organisation providing farmers with help regarding electricity but many viewed it as an actual supplier of electricity.

Although respondents reported growing 17 different crops, only seven of these were grown by more than two farmers. The most popular crops were maize, potatoes, cabbages, dry beans and spinach. Except cabbage and spinach these are all field crops, that can be grown under dryland conditions. Of the total land allocated for crops about 90% was used for maize and dry beans, 5% for potatoes and 5% for 12 other crops.

Only 25 farmers had irrigation for their crops. Sixteen of these mentioned the energy source for pumping water. Nine farmers used diesel, four used petrol and three used electricity. The average cost per farmer for diesel fuel used for irrigation was R4518. Forty-nine other farmers reported that water sources suitable for irrigation were located within 1 km of their fields. These farmers mentioned lack of pumps and/or electricity as a contributing factor to the unavailability of irrigation water. Yields per ha of most vegetables were only a fraction of optimal levels.

All farmers marketed their crops directly to the consumers. Although gross annual crop sales of as high as R160 000 were reported by only about one fourth of the respondents, gross sales in excess of R10 000 annually were reported. Mean annual sales of livestock were R9 000.

Fifty-eight farmers were involved with some form of macro-livestock. Of these all but two included cattle in their operation, either solely or in mixed livestock operations. Overall, however, sheep outnumber cattle among these Transkei farmers (6962 Vs 4292). Goats amounted to only 1865 head. Offtake of livestock was 16.5%, of which 915 was for sales, also indicating a commercial orientation. Nineteen of these farmers stated they milked cows and 13 reported milk sales. Testing of milk and milking parlour practices normally associated with commercial dairy were largely absent.

Management of livestock is not intensive, use of supplementary feeds is rare. Although vaccination and dipping were practiced by 82% of livestock farmers, only 5% used other medicines or veterinary services. Absence of fodder-flow programmes and production of fodder crops for winter use may be especially limiting in the sour-veld areas.

Chicken operations were reported by 43 farmers, keeping an average of 330 birds each. These small-scale enterprises involved a variety of breeds, but, overall about two thirds of the birds were broilers. Average annual income from poultry sales among these producers was R6818 to a maximum of R60 000. Annual income from sales of eggs was insignificant in comparison, averaging only R333. All sales were made directly to the public.

Eighty percent of the respondents heated their poultry houses for some part of the year. Nearly 50% of respondents with poultry reported using paraffin as a heating fuel, 20 percent used gas and only 7% used electricity. Use of gas was most expensive, respondents reported spending an average of nearly R10 000 per annum on this energy source. All those questioned believed that access to electricity would enhance their poultry production.

Only 15 farmers reported pig production in 1996. All were small-scale enterprises, the average number of pigs per producer was 12 and the maximum 29. Income from sales of pigs by these respondents averaged R3 700 in 1996 with the maximum being R17 000

These Transkei farmers share important characteristics with their white counterparts of the East Cape. Most importantly, they are clearly farming in order to sell products and they make use of hired labour in their enterprises. On the other hand, Transkei farmers differ from typical commercial farmers of the East Cape in many ways including their low level of mechanisation and technology and a corresponding use of very labour intensive production practices. At present these practices suit the conditions well, providing a high degree of self-reliance and limiting expenditures on external inputs.

These findings clearly demonstrate that agriculture is a viable economic option for many residents of the Transkei region. However, the scale of these agricultural enterprises is small in comparison to most commercial farm enterprises in the more developed regions of the Eastern Cape Province and elsewhere in

South Africa. Most Transkei farmers lack access to electricity and most view this as a handicap and obstacle to further development of their farm enterprises. However it must be recognised that many other factors come in to play in limiting the economic development of agriculture in the Transkei, including land tenure issues, poor roads, lack of services and information sources, distance to markets and their availability, credit facilities and other infrastructure limitations.

5.2 CONCLUSIONS

Africa's economic strength and vitality depends upon a sound agricultural sector. This means that small-scale farmers must be given the opportunity to improve their conditions, and thereby, through their new productivity, improve the condition of their countries (ARDRINEWS, 1990). A sustainable agriculture is one that, over the long term, enhances environmental quality and the resource base, on which agriculture depends; provides for basic human food and fibre needs, is economically viable, and enhances the quality of life for farmers and society as a whole. (ARDRINEWS 1990). The small-scale commercial farmer in the Transkei, as revealed by the findings, operates under complex farming environment. In this environment a combination of physical, economic and institutional factors influence farmer decisions.

A typical Transkei farmer is endowed with a bundle of physical resources consisting of privately used arable land holdings and communally used grazing land, human resources derived from the family members and capital assets (livestock and cash holdings) acquired by the household over time. The amount of resources possessed by the household limits the maximum size of

agricultural activities because markets for resources such as land and capital are often missing and local markets for agricultural labour are very thin. Thus, family size is the central determinant of household labour capacity. Family size also determines the consumption requirements of the household. In the absence of credit markets, consumption needs reduce the amount of money available for purchasing inputs during the production season. The impact of consumption expenditure on production budgets may render it rational for a household to pursue a food self-sufficiency strategy even when cash crops appear to be more competitive. This is especially true when consumer prices for basic food prices are way higher than producer prices.

Farm production of crops or livestock require a combination of internal resources (land, labour, capital) and external inputs (seed, fertilizer, feeds, machinery) which have to be acquired from the input markets. Even though the revenue which is realised at the end of the growing season may exceed the cost of inputs used in growing a given crop, the household may not afford to grow the crop or adopt a technology which is otherwise profitable due to short term budgetary constraints.

It is therefore clear from the findings that output from farm production contributes to household income directly through retention or indirectly through sales. The decisions of households to grow food crops instead of cash crops or to hold onto cattle stocks instead of selling them can only be understood in the context of overall consumption demands and budgetary constraints. Unlike large-scale commercial farmers who enjoy access to financial markets, the smallholder farmer has to take into account consumption demands on the farm budget when making production decisions. Budgetary demands may force the

household to sacrifice yield in favour of immediate survival needs by weeding the fields of the neighbour for a wage while its own crop is suffering from lack of weeding.

It is also obvious from the findings that the existing set of agricultural policies and institutional regulations also affect the farmer's production environment and market expectations. The following key avenues affect the farmer's environment. Research and extension policies affect household decision making and management skills. Output and resources market and price policies affect households through product and resources utilisation decisions while input delivery and credit policies affect households through input application decisions. It is also evident that the farming environment becomes even more complex due to the uncertainty of weather, marketing and pricing policies on the basis of their own subjective expectations.

To appreciate the difficulties of surviving, let alone earning the most income under this environment, policy-makers and outsiders who are often quick to dismiss farmers decisions as inefficient, must put themselves into the farmer's environment and see if they could outperform the farmer.

5.3 RECOMMENDATIONS

In this study it became apparent that the potential for improving agricultural productivity in Transkei does exist. In most areas the resources like land, water, electricity and even the human resources are available. The most obvious aspect is that they are under utilised due to several constraints which disfavour production. The small-holder farmer in Transkei is confronted with several production challenges which neeed to be addressed for incresed agricultural productivity. In the light of these challenges, the following recommendations are proposed.

5.3.1 Livestock

Efforts to improve agriculture in Transkei should be focused much more on livestock than crop production. As revealed by the findings the single most important virtue of the livestock industry is the fact that it is a self-renewable resource. One of the tragedies of livestock is the near extinction of the indigenous cattle through cross breeding programs to "improve" the native cattle of the region. It is recommended that a major effort should be made to reintroduce the Nguni and Sanga cattle in view of their high potential in production systems exploiting sexual dimorphism, and their adaptedness to stressful environment (Scholtz 1988).

5.3.2 Water

It is recommended that a study be undertaken of the water resources of the Transkei area (including underground water) so that a long term water development plan can be drawn up showing what waters will be available (and for how long) for irrigation.

5.3.3 Fruit

Prior to any commercial fruit tree establishment it is recommended that a study of micro-climate be undertaken in order to establish the areas most suitable for various fruit crops and the mitigating actions that will need to be taken for the production of such crops in marginal areas.

5.3.4 Forestry and woodlots

It is recommended that private woodlots and agroforestry could be practised/established in the most convenient areas – in the villages in unused corners, in the backyard and in sloping lands. Agroforestry could be practised in the cultivated fields. Fruit and nut trees planted on the contour banks and along fences would increase the productivity of the land. The availability of trees and extension support are current limitations with respect to the planting of trees. It must be accepted that once a decision to produce firewood commercially is taken, professional help should be sought and preferably trained forest manages employed. Provision of fuel wood can be achieved through a number of ways:

- agroforestry
- private woodlots for own use
- entrepreneurs producing wood for sale
- the Tribal Authority producing firewood for sale

Commercial forestry/woodlots should be carefully planned. Not only will they be displacing other activities such as grazing in most cases but will, in many instances, decrease water seepage into perennial streams.

5.3.5 Farmer training

Farmers should be encouraged to define their own training needs. Commercial farmer training should be directed at production and farm management. It is recommended that farmers be trained in functional numeracy and simple bookkeeping as part of farmer development programmes.

It is recommended that leadership training be instituted for farmers' associations and women's groups where this is an expressed need of the groups concerned.

5.3.6 Classification of farmers

To fit agricultural and rural development objectives to the needs of individual households, it is recommended that, in consultation with local farmer organisations, rural communities and farmer groups be categorised according to those farmers with the potential to produce cash income from crops, livestock orientated farmers, and low resource farmers of marginal or below subsistence levels.

5.3.7 Institutional support

The small-holder commercial farmer in Transkei is subjected to the absence or scarcity of institutions which support food security."The lack of incentives to rural farmers such as inputs, credit and marketing" has made agriculture to be a dull exercise, the surpluses that are produced by farmers suffer serious market constraints. Inadequate marketing and transport facilities, fragmented markets and uneconomic and unpredictable prices are generally considered to be some of the major bottlenecks to

smallholder development. To ensure effective, efficient and reliable support systems, farmer support centres, which do not only provide inputs but training as well and equipment, should be established. The institutional support required by the small-holder farmer should also take care of the following:

- provision of seasonal and other inputs and funding thereof
- provision of marketing services such as the financing of storage, grading and transport facilities
- provision of extension, training, demonstration and research
- provision of mechanisation services with emphasis placed on the establishment of local contractors, should cater for ploughing planting and weeding
- taking institutions to the people not people to the institutions
- capacity building and training programmes to develop the smallholder farmer to take full responsibility rather than relying solely on outsiders.

5.3.8 Communication and extension

One of the major objectives of extension is to make appropriate information to be readily available to the farming community and to provide training. To make the communication flow and extension services more appropriate and relevant to the black commercial farmer, it is recommended that:

- production and distribution of information packages, illustrated "how to" booklets and brochures be given specific attention by the extension services
- the radio programmes on marketing, agriculture, policy issues, topics relevant to farming and sharing of experiences by farmers be in place at appropriate times for the farmers

- farmer exchange programmes should be enchouraged
- agricultural shows and exhibitions promote interest and competition amongst farmers

5.3.9 Agricultural information

The Transkei small-holder farmers have been found to be lacking in agricultural information. For good performance a reasonable amount of information is necessary as a back up to agricultural productivity. It is therefore recommended that an Agricultural Information section falling under the Chief Training Officer be created and charged with the responsibility of co-ordinating radio programmes, developing back-up written information and audio-visual material for field extension staff and farmers.

5.3.10 Agricultural policy

The small-holder farmers should be proactive in demanding policies rather than rely on periodic policy offerings from the government. Farmers should have their own vision on the basis of which they must initiate policy negotiations with the government. A key challenge for future policy formation is therefore in strengthening the small-holder farmer's voice for advocacy.

It is recommended that a team of farmers and experts from the Department of Agriculture and Land Affairs and any other experts deemed necessary draw up an operational agricultural and rural development policy. Policy considerations should include the prime movers of agricultural development:

- Favourable economic incentives which protect the economic interests of farmers and rural people. These interests include

agricultural prices, access to markets and credit, efficient farm input delivery systems, rural energy and industrial policies that support agriculture

- Development of human capability and managerial skills created through formal education, extension, training and job experience
- New technology that is generated by research and tested by extension workers and diffused to farmers, with the emphasis on farming systems
- Investment in physical capital such as roads, domestic water supplies, irrigation schemes and biological capital, including crop and livestock improvement
- Security of tenure plays a strategic role in converting family labour into capital formation because, with security, farmers can be assured that farm improvements can be passed on to the next generation or the security of land tenure from all tenure systems should be promoted
- Improvement in the performance of rural institutions such as marketing, credit facilities, research and extension.

5.3.11 Farm management and control

The small-holder commercial farmers have been found to be lacking in in the overall managerial skills. An approach is required with emphasis on individual responsibilities and accountability especially for those activities over which farmers normally have control i.e. farm level planning, implementation, co-ordination, control, supervision, evaluation and accepting the outcome of efforts – profits or losses. It is also recommended that more attention should be paid on training in record keeping, crop and livestock management and the general management of the farm.

5.3.12 Farmer selection (leased government farms)

It is recommended that upfront selection of farmers should best be viewed as a " screening exercise". It is important to ensure that an initial selection process takes place. This process should primarily be directed at the objectives of farming. Where productive farming is promoted selection criteria should

- be as objective and non-discriminatory as possible
- should attend to the technical inclination of a person and
- should place emphasis on managerial attributes as well as business know-how and experience.

Gender aspects could also be introduced to ensure equitable access. Selection should be followed by a "learning by doing" process whereby the "winners" will be afforded the opportunity to continue and "losers" will be afforded the opportunity to continue and "losers" to opt-out.

5.3.13 Land tenure and land reform

Security of tenure is necessary for smallholders to take a long-term view and conserve and invest in the land and its natural resources. It is recommended that land tenure arrangements should ensure fair and equitable access, security of land use and tradability of land rights. Community preferences should be accommodated in the evolving land right system. To address the needs of small-holders, land reform should be implemented so as to address the following:

* legislative and institutional options for residential and agricultural tenure
* appropriate forms of local authority and the responsibility for service provision in rural areas
* the roles of provincial government departments in land reform, restitution and rural development
* resolving boundary disputes
* policy formulation for land reform and restitution

5.3.14 Farmer support services

As agriculture remains the backbone of the Eastern Cape Province's economy, it is therefore recommended that farmer support centres be established as a matter of urgency to address the agricultural needs of small-holder farmers. Farmers should be allowed to select the agency to provide support services. It is recommended that the implementing agent should facilitate access and provide information on alternatives. As part of the support programme, as proposed also by van Rooyen and Botha (1994), the following aspects should be addressed:

- ◊ the provision of inputs and the funding thereof (credit) to the farmer;
- ◊ a mechanisation service, which caters for aspects of transportation, land preparation, planting and cultivation (harvesting and transport to storage may also be required), as well as the maintenance of machinery, implements and infrastructure;
- ◊ marketing channels and services to cater for all aspects of marketing (i.e. grading, storage, packing and transport);
- ◊ extension and demonstration services, information and specific project related research to ensure that maximum opportunity can be made of existing and new technology;
- ◊ training to facilitate the development of managerial and technical skills needed both on the farm and at a project level;
- ◊ off-farm agricultural infrastructure necessary to support farming;
- ◊ a sound policy framework to provide an environment conducive for productive, equitable and sustainable agricultural development; and
- ◊ a farmer lobby system to allow farmers to promote their interests in the political market.

5.3.15 Co-operatives

It is recommended that co-operatives should be investigated from an economic efficiency and cost saving viewpoint. Farmers should agree to operate on a co-operative basis. Co-operatives cannot be imposed on a top down basis.

5.3.16 Subsidization, cost recovery and user charges

Economic rates should be charged for services rendered. Subsidisation should rather be directed to the provision of public goods and elements of human capital, capacity development and farming systems research.

5.3.17 Literacy

Extension services should join hands with non-governmental organisations and other organised initiatives to combat illiteracy in the farming community. The adult basic education should be encouraged and as such the extension personnel should play an active role in making a connection between literacy instruction and farming. Because farming is an on-going occupation for many illiterate farmers at present, further research needs to be done on ways of teaching them such skills as farm management and marketing

5.3.18 Credit facilities

Access to formal commercial bank credit gives large modern commercial farmers a considerable advantage in risk diffusion over small farmers without access. It is therefore recommended that the establishment of a viable credit function for the family farm is a *conditio sine qua non* of modern commercial farming. It is therefore essential that emphasis is needed for all efforts to develop rural credit, including co-operative banking and other savings mobilisation mechanism.

It is also recommended that the Land Bank which is the major borrower of agricultural credit to farmers be restructured as a matter of urgency to be user friendly to small scale and emerging commercial farmers.

5.3.19 Extension approaches

It is recommended that a service to commercial farmers, be they emerging or established, is maintained. This service requires ward officers to work closely together with organised agriculture, identifying and communicating priority needs to suppliers of information and other related services, including a team of agricultural scientists. It is recommended that programmes aimed at developing a team of subject matter specialists geared to meet the main needs of small-holder commercial agriculture in the province are developed immediately. It is also recommended that the Provincial extension service pays special attention to its relationship with organised agriculture, with a view of developing a working relationship with all farmers unions (EPAU, EDAFU, TCFU) and others and jointly communicate the agreements that have been reached to the Eastern Cape population by means of newspapers and radio.

It would also be recommended that extension officers be trained in indigenous knowledge relevant to the farming communities they serve.

Farmer led approaches to agricultural extension are also recommended as an encouragement to other fellow farmers.

1.2.20 Training material

Extension officers in some areas need to be strengthened on their knowledge of agricultural extension policy and agricultural assistance programmes which would benefit the small-holder farmer. Both farmers and extension officers would benefit from visual aids used in the training sessions with farmers. It is recommended that illustrated teaching tools suitable for use in rural areas with or without electricity, a trainers manual, and audio-visual material be acquired for effective communication.

5.3.21 Radio

Radio is clearly important as one of the appropriate media in the full spectrum of media to be employed in communicating agricultural messages. It is therefore recommended that radio programmes on farming advice should be sensitive to the level of the farmers. These programmes should serve either as introductions or follow up to hands on training workshops. The presenters of the radio programmes should also be well trained in mass communication and have a clear understanding of the audience they are dealing with. The best times for delivering these programmes should be researched in order to suit the times preferred by farmers. Sharing experiences of other farmers and communities, for various purposes of awareness building, motivation, legitimisation, reinforcement of new practices, and sharing technical advice.

5.3.22 Marketing

Market information has to be area specific as possible, and the utilisation of the radio by the provincial extension service for this purpose should receive immediate and urgent attention, as the lack of marketing information was a deeply felt need by the farmers interviewed.

In order to encourage income generation from small-holder commercial farmers, easy access to both local and foreign market must be encouraged. It is therefore recommended that:

- a programme to encourage government institutions (eg. hospitals, prisons, boarding schools and others) to buy locally in support of local producers should be in place
- a programme to support contract farming and diversification should also be in place
- development of infrastructure by government (storage facilities and roads)
- Development of local market facilities
- Rural markets should be encouraged as they are capable of providing certain services at lower costs than available alternatives, they are not capital intensive, they have no reliance on government rules and regulations and traders are characterised by a degree of mobility and flexibility.

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Sample number

SURVEY OF COMMERCIAL FARMERS IN TRANSKEI

Interviewer 's name.....

1. Farmer / household

Name of the farmer		
Title		
Gender of farm owner		
Home language		
Occupation		
Marital status		
District		
Village / area		
Longitude		
Latitude		

2. HOUSEHOLD AND RESIDENTIAL CHARACTERISTICS

2.1 CAHRACTERISTICS OF THE FARMING HOUSEHOLD

Name	Sex	Age	Relationship	Marit. Status	Occupation	Employment status	Sector

2.2 FARM DWELLINGS AND BUILDINGS

2.2.1 Is your residence on the farm (farm = place where actual farming is done)?

Yes = 1 No = 2 ☐ ☐

2.2.2 If no, how far is it from your residence to your farm?..... ☐

2.2.3 Please provide the following information

AT THE RESIDENTIAL SITE

Types of buildings		
Farmer's residewnce		
Farm buildings		
Labour housing		

AT THE FARM

	No. of dwellings	No. connected to electricity
Farm residence		
Farm buildings		
Labour housing		

3. FARM LABOUR

Sex		
Males		
Females		
Total		

4. SOCIO - ECONONOMICS AND NEEDS

4.1 Name the main enterprise on your farm .....

4.2 What was the esimated total cash income of your household in 1996?

R.....

4.3 From your toatal household cash income, what proportion was derived from farming in 1996?

1. <1/4 (<25%)
2. 1/4 (25%)
3. 1/4 to 1/2 (25 - 50%)
4. 1/2 to 3/4 (50 - 75%)
5. >3/4 (75%)

4.4 What proportion of your farm income was derived from:

1. Livestock
2. Crop
3. Vegetables
4. Fruit
5. Poultry
6. Piggery
7. Other (specify)

.....

4.5 What dfevelopments would you like to implement on your farm within the next year?

(What are you aiming at or what are your plans?)

.....

.....

.....

4.6 What prevents you from implementing your plans?

.....

.....

.....

5. ORGANISATIONS AND INFORMATION SUPPLY

5.1 Are you a member of a farmer's organisation?

Yes = 1 No = 2

5.2 If Yes, what is the name of the organisation?

.....

.....

.....

5.3.1 Who provides you with information? (Tick where applicable)

5.3.2 Of the sources indicated, which is the most useful to you?

	Source	Most useful
Extension		
Radio		
TV		
Other farmers		
Farmer magazine		
Farmer organisation		
Other (specify)		

.....

5.4 Is there any agricultural farming magazine or publication that you read regularly?

Yes =1 No = 2

5.5 If yes, which magazine or publication do you read regularly?

1. Farmer's weekly
2. Landbouweekblad
3. Other (specify)

.....

5.6 Are there any agricultural or farming programmes on TV that you watch regularly?

Yes = 1 No = 2

5.7 If yes, which one?

1. Agriforum
2. Other (specify)

.....

5.8 Are there any agricultural or farming programmes on the radio you listen to regularlry?

Yes = 1 No = 2

5.9 If yes, which programmes do you listen to?

.....

.....

.....

6. THE FARM

6.1 Total area of the farm / plot: .....

6.2 Land use

Land use	Area	Unit

6.3 Land tenure

6.3.1 How do you hold your farm?

Freehold	
Quitrent	
Leased state land	
Leased state land	
Certificate of occupation	
Other (specify)	

.....

7. ANIMAL SECTION

7.1 Provide current status of your livestock and numbers sold in 1996.

Animal type	Number owned at present	Total offtake in 1996 (No. animals)	Deaths (No)	Total sales (No. animals)	Average sale price per animal	Total income	Market outlet*
Cattle							
Sheep							

Goats							
pigs							
Poultry							
Other							

* options

1 = sell through a Co-op/ board

2 = sell directly ot public

3 = retailer

4 = market

5 = marketing agent

6 = produce for your own family use

7 = other (specify)

.....

7.2 LIVESTOCK MANAGEMENT

7.2.1 How do you monitor animal health?

.....

.....

.....

.....

7.2.2 Which of the following practices do you apply?

Vaccination		
Dipping		
Veterinary services		
Medicinal plants		

7.2.3 What other animal health practices do you apply?

.....

.....

.....

7.2.4 How do monitor livestock condition?

.....

.....

.....

7.2.5 Which of the followning practices do you apply?

Mineral licks

Grow fodder

Buy fodder

Buy concentrates

Milling of feed

7.2.6 What other practices do you apply to maintain animal condition?

.....

.....

.....

7.2.7 Do you keep livestock records?

Yes = 1 No = 2

7.2.8 If yes, what do you record?

.....

.....

.....

8. POULTRY (broilers / layers) AND PIGGERY

8.1 Poultry

8.1.1 What type of poultry do you keep?
(Indicate current number of birds)

Type	Number of birds
Broiler	
Layer	
Mixed	
Other	

8.1.2 What type of chicken breeds do you keep?

.....

.....

.....

8.1.3 Where do you obtain the chicks?

.....

.....

.....

8.1.4 At what age do you buy your chicks?

.....

8.1.5 At what age do you sell your chickens?

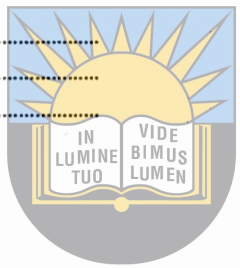
.....

8.1.6 How do you monitor chicken health?

.....

.....

.....



8.1.7 Which of the following practices do you apply?

1. vaccination

2. medicines

3. vitamins at arrival

8.1.8 What other practices do you apply to maintain chicken health?

.....

.....

.....

8.1.9 How do you monitor condition of chickens?

.....

.....

.....

8.1.10 Which of the following practices do you apply?

8.1.10.1 Special housing

8.1.10.2 Heating

8.1.10.3 Rations

8.1.10.4 Mulching

8.1.10.5 What other practices do you apply to ensure adequate growth of the birds?

.....

.....

.....

8.1.11 Housing, heating, feeding and mulching

8.1.11.1 How many poultry houses do you have? | | | | |

8.1.11.2 What are the houses made of?

House 1		
House 2		
House 3		
House 4		

8.1.11.3 How many birds can be kept in each house?

House 1				
House 2				
House 3				
House 4				

8.1.11.4 What source of energy do you use for heating the houses?

House 1				
House 2				
House 3				
House 4				

8.1.11.5 Quantity of fuel / energy used per time interval (specify units)?

House 1				
House 2				
House 3				
House 4				

8.1.11.6 Cost per unit of fuel / energy?

F1				
F2				
F3				

8.1.11.7 What type of mulching material do you use?

.....
.....
.....

8.1.11.8 Where is the mulching material obtained?

.....
.....
.....

8.1.11.9 What is the cost of the mulching material?

.....
.....
.....

8.1.11.10 Is soiled litter used on the farm? Yes = 1 No = 2

8.1.11.10.1 If yes, specify.

.....
.....
.....

8.1.11.11 In case of rations, what do you feed?

Ration	Period (Weeks)		
Broiler starter			

Broiler grower			
Broiler finisher			
Laying mash			
Sunflower seeds			
Maize grain			
Crushed maize			
Milled maize			
Other (specify)			

8.1.11.12 What kind of feeding system do you apply?

.....

.....

.....

8.1.12 Do you keep records? Yes = 1 No = 2

8.1.12.1 If yes, what do you record?

.....

.....

.....

8.2 Piggery

8.2.1 What type of pig breed do you keep?

.....

.....

.....

8.2.2 Where do you obtain your piglets?

.....

.....

.....

8.2.3 At what age do you buy piglets?

.....

8.2.5 At what age do you sell the pigs?

.....

8.2.6 How do you monitor pig health?

.....

.....

.....

8.2.7 Which of the following health practices do you apply?

Use of conventional medicines

Vaccines

Other (specify)

.....

.....

8.2.8 How do you monitor pig condition?

.....

.....

.....

8.2.9 Which of the following practices do you apply?

Housing

Heating

Rations

Heating of piglets

Other (Specify)

8.2.10 What do you feed pigs? (indicate relevant period)

Ration	Period (Weeks)
Pig grower	
Pig finisher	
Germ meal	
Maize grain	
Crushed maize	
Milled maize	
Pig swill	
Other (specify)	

8.2.11 What kind of feeding system do you apply?

9. ANIMAL PRODUCTS

9.1 Do you produce any of the following on your farm? Yes = 1 No = 2 ☐ ☐

Wool	☐	☐
Milk	☐	☐
Hides / skins	☐	☐
Eggs	☐	☐
Other (specify)	☐	☐

9.2 MARKET INFORMATION ON 1996 DATA

Please provide the following information

Name of product	Quantity (Specify units)	Quantity sold in 1996 (Specify units)	Price per unit (R)	Total sales (R)	Market outlet*
Wool					
Milk					
Hides / skins					
Eggs					
Other					

*options

1 = sell through a Co-op / board

2 = sell directly to public

3 = retailer

4 = market

5 = marketing agent

6 = produce for your own family use

7 = other (specify)

9.3 Wool

9.3.1 Do you grade your wool? Yes = 1 No = 2 ☐ ☐

9.3.2 Do you process your wool? Yes = 1 No = 2 ☐ ☐

9.3.3 If yes, what processing do you do? ☐

.....

.....

.....

9.3.4 What wool breeds do you keep?

.....

.....

9.4 Skins

9.4.1 What do you do with the skins between skinning and selling?

.....

.....

.....

9.5 Milk / dairy

9.5.1 How many cows are in milk at present?

.....

9.5.2 How many goats are in milk at present?

.....

9.5.3 How many sheep are in milk at present?

.....

9.5.4 What is the average milk yield per cow in milk?

.....

9.5.4 What is the average milk yield per goat in milk?

.....

9.5.4 What is the average milk yield per sheep in milk?

.....

9.6 Do you do milk testing?

Yes = 1 No = 2

9.7 Do you have a special building for milking (milking parlour)?

Yes = 1 No = 2

9.8 What precautionary measures do you take against diseases in the milking parlour?

.....

.....

9.9 Eggs

9.9.1 Do you grade eggs according to size?

Yes = 1 No = 2

9.9.2 Do you package eggs before selling?

Yes = 1 No = 2

9.9.3 Do you price eggs differently according to size?

Yes = 1 No = 2

9.10 Pastures (planted)

9.10.1 Do you have planted pastures?

Yes = 1 No = 2.

9.10.2 Do you irrigate your pastures?

Yes = 1 No = 2

9.10.3 If yes provide the following information:

area under irrigated pastures.....

no of sprinklers.....

number of pumps.....

Make and model of pumps

P1	
P2	

P3		

Energy source

P1		
P2		
P3		

Fuel use per week/month/year

P1		
P2		
P3		

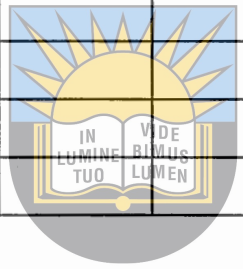
Cost per unit of fuel

F1		
F2		
F3		

10. FRUIT TREES.

10.1 Provide current status and the quantities sold in 1996.

Fruit tree (give names)	area (ha)	Total yield	Total sales	Sales price per unit (specify)	Total sale price	market outlet



options

1 = Sell through a co-op / board
2 = Sell directly to public /
3 = retailer
4 = market
5 = marketing agent
6 = produce for your own family use
7 = other (specify)

10.2 Do you apply fertilisers to your fruit trees ?

10.3 If yes, name them.

.....

10.4.1 Do you use the pesticides in your orchard?

Yes = 1 No = 2

10.4.2 If yes, name them

.....

.....

10.5 Is you orchard under irrigation ?

Yes = 1 No = 2.

10.5.1 If yes provide the following information:

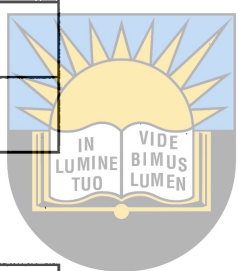
area of orchards under irrigation.....

no of sprinklers.....

number of pumps.....

Make type and model of pump

P1		
P2		
P3		



Energy source

P1		
P2		
P3		

Fuel use per week/month/year

P1		
P2		
P3		

Cost per unit of fuel

F1		
F2		
F3		

10.6 Do you practise

Prunning trees		
Fruit thinning		
Washing fruit		
Waxing fruit		
Grading fruit		
Packaging fruit		

10.7 Do you have wind breaks for your orchard ?

Yes = 1 No = 2

11. CROPS

11.1 Information to be based on 1996 data.

Name of Crop	unit	Total yield	Total sales	Sales price per unit (specify)	Total sales	market outlet
Maize						
Beans						
Wheat						
Vegetables (specify)						
Groundnuts						
Sunflower						
Other (specify)						

*options

1 = Sell through a co-op / board

2 = Sell directly to public /

3 = retailer

4 = market

5 = marketing agent

6 = produce for your own family use

7 = other (specify)

11.2 Is there a source of water nearby where you can extract irrigation water ?

Yes = 1 No = 2

11.3 If yes, what kind of source is it? Tick where applicable

11.4 How far is the source from your fields?.....

11.5 Is the source used for irrigation at present?

Yes =1 No = 2

11.6 If no, why not ?

.....

.....

.....

11.7 If yes, is any of your land irrigated?

Yes = 1 No = 2

11.7.1 If yes provide the following information

area under irrigation.....

Which months of the year do you irrigate?

Month.....to Month.....

no of sprinklers.....

number of pumps.....

Make type and model of pump

P1		
P2		
P3		

Energy source

P1		
P2		
P3		

Fuel use per week/month/year

P1		
P2		
P3		

Cost per unit of fuel

F1		
F2		
F3		

11.8 How do you prepare your land ?

Tractor		
Animal draught		
By hand		
Others (Specify)		

11.9 Do you apply organic fertilizers ?

Yes = 1 No = 2

11.10 If yes state types and rates (e.g tons/ha/annum)

11.11 Do you apply artificial fertilizers ? ?

Yes = 1 No = 2

11.12 If yes state rates (e.g tons/ha/annum)

11.13 What kind of seeds do you use ?

Farm selected	
Commercial	
Local breeder\selector	

Other

11.14 What are the reasons for your choice of seed?

.....

.....

11.15 Do you use pesticides for crops?

Yes = 1 No = 2

11.16 If yes, name them.

.....

.....

.....

12. ENERGY NEEDS.

12.1 Have you ever heard of Agrelek before :

Yes = 1 No = 2

12.1.1 If yes, where did you hear about AGRELEK?

.....

12.1.2 According to you what is AGRELEK?

.....

12.2 Do you think electricity could improve your current farming operations :?

.....

12.3 Name all energy source,used on your farm?

Energy Source	What is it used for	Amount used per time interval (define unit and time interval)	Cost per time interval or per unit

12.4 If you use electricity or electrical equipment, what problems do you encounter?

.....

12.5 Which electrical appliances you use in your house (tick where applicable).

Stove			
Iron			
Heater			
Kettle			
Washing machine			
Freezer			
Other (specify)			

12.6 Name the electrical farm implements / technology you use at present on your farm.

.....

.....

Farmer	Enterprise	District	Longitude (° ‘ “) S	Latitude (° ‘ “) E
1	1	Bizana	30 53 08	29 52 25
2	1	Bizana	30 52 48	29 52 30
3	1	Bizana	30 51 42	29 36 43
4	1	Bizana	30 52 39	29 52 11
5	1	Bizana	30 51 35	29 53 13
6	1	Bizana	30 49 42	29 52 43
7	1	Bizana		
8	2	Bizana	30 52 39	29 52 11
9	2	Bizana	30 52 34	29 53 03
10	5	Bizana		
11	9	Bizana	30 51 28	29 52 34
12	9	Bizana		
13	11	Bizana	30 50 57	29 35 38
14	17	Bizana	30 51 03	29 47 57
15	3	Butterworth	32 18 43	28 14 45
16	3	Butterworth	32 24 51	28 11 04
17	3	Butterworth	32 20 51	28 11 25
18	3	Butterworth	32 20 54	28 12 36
19	4	Butterworth	32 20 55	28 09 10
20	8	Butterworth	32 21 39	28 13 54
21	8	Butterworth	32 20 42	28 14 25
22	8	Butterworth	32 20 34	28 01 24
23	11	Butterworth	32 21 17	28 07 59
24	12	Butterworth	32 18 13	28 15 08
25	1	Cala	31 31 49	27 40 49
26	3	Cala	31 29 42	27 46 20
27	3	Cala	31 34 36	27 40 54
28	3	Cala	31 31 54	27 50 00
29	8	Cala	31 30 28	27 35 09
30	8	Cala	31 28 21	27 45 22
31	1	Cofimvaba	31 50 57	27 36 26
32	1	Cofimvaba	31 48 09	27 35 35
33	2	Cofimvaba		
34	4	Cofimvaba	31 49 50	27 42 16
35	4	Cofimvaba	31 45 25	27 47 07
36	4	Cofimvaba	31 49 26	27 49 16

37	4	Cofimvaba		
38	10	Cofimvaba		
39	1	Elliotdale	31 58 24	28 40 59
40	2	Elliotdale	31 58 47	28 41 21
41	2	Engcobo	31 33 51	28 12 33
42	2	Engcobo	31 41 03	27 59 09
43	2	Engcobo	31 40 24	28 14 02
44	6	Engcobo	31 47 19	27 55 38
45	1	Flagstaff	31 03 48	29 30 57
47	1	Flagstaff	30 56 19	29 33 37
48	2	Flagstaff	30 53 37	29 32 22
49	9	Flagstaff	30 50 32	29 31 13
50	1	Herschel	30 37 24	27 21 55
51	3	Herschel	30 37 30	27 22 00
52	3	Herschel	30 37 37	27 22 03
53	3	Herschel	30 38 04	27 08 13
54	4	Herschel	30 32 35	27 22 35
55	4	Herschel	30 32 07	27 22 54
56	6	Herschel	30 35 43	27 07 20
57	8	Herschel		
58	13	Herschel	30 37 34	27 21 53
59	14	Herschel	30 28 45	27 21 28
60	3	Hershel	30 37 07	27 10 28
61	4	Kentane		
62	1	Lady Frere	31 33 03	27 20 14
63	3	Lady Frere	31 32 52	27 20 21
64	3	Lady Frere	31 34 30	27 16 17
65	3	Lady Frere		
66	3	Lady Frere	31 33 35	27 22 01
67	8	Lady Frere	31 33 28	27 24 26
68	8	Lady Frere	31 32 44	27 18 50
69	8	Lady Frere	31 31 59	27 21 18
70	8	Lady Frere	31 31 48	27 20 48
71	8	Lady Frere	31 32 04	27 25 27
72	8	Lady Frere	31 33 01	27 20 19
73	8	Lady Frere	31 33 18	27 22 37
74	8	Lady Frere		
75	8	Lady Frere	31 332 33	27 20 35

76	8	Lady Frere	31 32 28	27 18 55
77	8	Lady Frere	31 34 40	27 19 42
78	8	Lady Frere	31 31 57	27 24 05
79	8	Lady Frere	31 32 29	27 22 36
80	8	Lady Frere	31 35 43	27 18 33
81	8	Lady Frere	31 34 27	27 21 30
82	12	Lady Frere	31 33 59	27 20 49
83	13	Lady Frere	31 32 13	27 21 25
84	13	Lady Frere	31 32 35	27 24 03
85	15	Lady Frere	31 34 12	27 25 32
86	17	Lady Frere		
87	8	Maluti	30 18 04	28 32 33
88	8	Maluti	30 16 23	28 24 02
89	8	Maluti	30 18 50	28 41 54
90	8	Maluti	30 17 36	28 35 51
91	8	Maluti	30 18 09	28 25 37
92	8	Maluti	30 17 50	28 36 51
93	8	Maluti	30 19 07	28 41 39
94	3	Matatiele	30 18 03	28 37 40
95	3	Matatiele	30 17 52	28 40 36
96	4	Mount Frere	30 50 57	29 04 01
97	10	Mount Frere	30 45 36	28 59 48
98	10	Mount Frere	30 41 56	28 46 08
99	10	Mount Frere		
100	2	Mqanduli	31 47 46	28 44 41
101	8	Mqanduli	31 51 29	28 45 04
102	11	Mqanduli		
103	15	Mqanduli	31 49 23	28 45 42
104	1	Mt Ayliff	30 41 40	29 21 55
105	2	Mt Ayliff	30 39 05	29 31 40
106	4	Mt Ayliff	30 48 47	29 16 41
107	1	Mzimkhulu		
108	1	Mzimkhulu		
109	4	Mzimkhulu	30 24 34	29 54 44
110	4	Mzimkhulu	30 21 43	29 54 21
111	5	Mzimkhulu	30 20 14	29 55 35
112	16	Ngqamakhwe	32 09 53	28 07 11
113	1	Ngqeleni	31 40 30	29 02 11

114	2	Ngqeleni	31 34 59	29 09 11
115	2	Ngqeleni	31 36 44	29 03 31
116	2	Port St Johns	31 36 02	29 29 47
117	2	Port St Johns		
118	2	Port St Johns	31 33 45	29 28 49
119	4	Port St Johns	31 34 23	29 31 02
120	4	Port St Johns	31 34 48	29 31 02
121	4	Port St Johns	31 33 47	29 30 54
122	4	Port St Johns	31 33 19	29 29 45
123	8	Port St Johns	31 35 37	29 27 38
124	1	Qumbu	31 03 36	28 43 06
125	1	Qumbu	31 13 27	28 57 26
126	2	Qumbu	31 03 36	28 43 06
127	14	Qumbu	31 03 52	28 42 36
128	1	Tsolo	31 17 12	28 43 22
129	1	Tsolo	31 20 04	28 51 13
130	1	Tsolo	31 17 56	28 38 10
131	1	Tsolo	31 28 23	28 49 24
132	6	Tsolo	31 13 09	28 37 42
133	1	Tsomo	31 59 46	27 51 19
134	2	Tsomo	31 51 46	27 45 15
135	2	Umtata	31 36 33	28 22 56

Enterprise:

Poultry = 1

Vegetables = 2

Livestock = 3

Crops = 4

Crops & poultry = 5

Piggery = 6

Poultry & piggery = 7

Livestock & crops = 8

Poultry & vegetables = 9

Crops & vegetables = 10

Fruit & vegetables = 11

Livestock & piggery & crops = 12

Livestock & poultry & crops = 13

Livestock & poultry & piggery = 14

Livestock & piggery = 15

Crops & poultry & piggery = 16

Livestock & poultry = 17