COMMUNITY EMPOWERMENT: MANAGEMENT OF PRODUCTION AND DISTRIBUTION OF AGRICULTURAL COMMODITIES AT PHONGOLO DISTRICT, KWA ZULU-NATAL

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THANDEKA PRUDENCE SIYAYA

DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS (COMMUNITY WORK) IN THE DEPARTMENT OF SOCIAL WORK IN THE FACULTY OF ARTS AT THE UNIVERSITY OF ZULULAND

SUPERVISOR	:	PROF TAP GUMBI
CO-SUPERVISOR	:	DR N NTOMBELA
DATE	:	FEBRUARY 2006

DECLARATION

The Registrar

University of Zululand

Dear Sir

I, THANDEKA PRUDENCE SIYAYA declare that this study "community empowerment: management of production and distribution of agricultural commodities at Phongolo district in KwaZulu - Natal" is my own work and that all sources I have used or quoted have been indicated and acknowledged by means of complete references.

Siyaya

KwaDlangezwa

DEDICATION

This work is dedicated to my parents Isaiah and Roster Ntombi Siyaya for their support.

ACKNOWLEDGEMENTS.

I express my gratitude to the following:

- My supervisor, Professor TAP Gumbi for guidance.
- Co-supervisor Dr N.H. Ntombela for checking the final document.
- Professor C.T. Moyo for proofreading.
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- Mr. Mtshali chairperson for farmer's association.
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ABSTRACT

This study examined aspects and strategies the communities adopt to manage the production and the distribution of agricultural commodities. The research also focused on problems experienced by small - scale farmers in the production and management of their produce. The food security of the communities relies on the good management of natural resources and production. It would appear that communities need to utilize and manage natural resources properly and appropriately if future generations have to sustain good produce for their livelihood.

The study further found out that small-scale farmers live in conditions that are intolerable in terms of their access to water, market and land. The identified problems limit the access of farmers to produce good quality agricultural commodities, which could be acceptable to market retailers and wholesalers. Agriculture cannot be neglected as the backbone of community survival. Empowering communities about agricultural production management is a development strategy that is aimed at facilitating economic growth. In conclusion the researcher recommends that communities need to be provided with inputs like irrigation facilities so that their production could not be seasonal but could be able to produce throughout the year.

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CHAPTER 1
ORIENTATION TO THE STUDY

1.1 INTRODUCTION

The Phongolo district is located in Northern KwaZulu-Natal, and is predominantly an agricultural community. The majority of the population relies on agriculture for food security. This community is able to survive without employment. For most people, livelihood can suit their circumstances, wants and needs better than employment. Livelihood could be regarded as the production and marketing of agricultural commodities that provide physical and social well–being for security against impoverishment.

The researcher will focus on how rural people manage the natural resources like water, soil, land, production and distribution of agricultural commodities. Lack of farming knowledge and poor managerial ability is the principal causes of low adoption rates and of sound agricultural commodities production practices. Francis (1995:4) contends it that although the community has a reserve of natural resources it manages resources, but not properly. The community produces enough agricultural commodities but there is a problem with the surplus, since agricultural products are perishable commodities.

There is a great demand for community workers to improve people's capacities to manage production. This implies, among other things, education and training. There is some potential for communal land ownership for small agro-industries to process livestock products such as hides and skins. Here the need is for quality products and professional designs so that agro-industries could compete in urban markets and the tourists industry.

1.2 STATEMENT OF THE PROBLEM

Despite the national food security and relative wealth, the experience of Phongolo community is that of poverty which is manifested in food insecurity. The communities are unable to produce agricultural commodities throughout the year, yet they have resources. Lack of farming knowledge and managerial abilities are major problems. The community faces constraints in managing the natural resources, the produced agricultural commodities and in marketing them.

1.3 MOTIVATION OF THE STUDY

Interest in undertaking this study was aroused by seeing that communities survived without employment. The researcher was interested in understanding the dynamic process through which the Phongolo community can manage resources, produce and distribute agricultural commodities. As an agriculturist and facilitator of community development, the intention was to develop strategies to help rural people who experience critical shortages in material and human resources and have few opportunities for economic activity. It is interesting to see people combining their resources in a variety of ways in order to support their families.

It is not surprising to find out that traditional practice, values, social traditions and cultural beliefs held by rural households, have been observed by some as fundamental barriers to agriculture and economic growth. The question to be answered is how communities could be empowered in order to become active agents in managing natural resources and production.

1.4 OBJECTIVES OF THE STUDY

The objectives of the study are as follows:

a) To identify aspects and methods communities adopt to manage the natural resources, production and distribution of agricultural commodities. The researcher will investigate about activities and processes, which are involved in the management of production and marketing of commodities;

b) To identify major problems experienced in managing production and produced agricultural commodities and;

c) To identify strategies they use, for distributing agricultural commodities.

1.5 BACKGROUND OF THE STUDY

According to the White Paper (1995:13) agricultural production makes a small contribution to household income; over one third of rural households continue to engage in agricultural production, making it the most important livelihood practice. Small-scale farmers in rural areas do have the land but it is not enough for production. This is for especially women who only own community garden plots. When they talk about the land which is fully utilized they talk about land that is less than a quarter of a hectare.

Small–scale farmers live in conditions that are inadequate or intolerable in terms of their access to water and land. The choice of producing vegetables is based on the resources they have, and the community ends up producing the same vegetables like onions, which are drought resistant. The question is how could small – scale farmers be empowered to a point where they could grow industrious crops like sunflower, soya beans and wheat?

Irrigation schemes in rural areas are not suitable for small–scale production and lack appropriate support from development agencies. Provision of dependable water supplies could contribute to food production. They grow the same vegetables and maize; the intention of growing these is to sell and generate

income. The question is where will the market be if they grow the same vegetables? The small–scale farmers grow vegetables and maize in the same area for more than 10 years. The land needs to lie in fallow in order to regain fertility. As a result of continuous ploughing they do not reach maximum harvest because the land is not productive.

If the rural community practises crop rotation, maize is always alternated with the same vegetables and this perpetuates diseases and pests. There is a great need to teach people about the market concept that prior to producing or harvesting a farmer needs to have a specific market where he would sell the commodities. The rural community or small-scale farmers have a target the market if they could grow various vegetables.

According to the Agricultural Policy (1998:10) the present structure of agriculture and rural communities is characterized among others, by a very uneven income distribution. South Africa is a country lacking sufficient water supplies. It is also characterized by the scarcity of high potential agricultural land. The non-agricultural demand for both these resources is increasing. It is imperative for agriculture to utilize these two resources to ensure sustainable production of agricultural commodities.

1.6 VALUE OF THE STUDY

The value of the study would possibly be as follows:

- After the dissemination of the information to the department of agriculture, the department offers booklets to small-scale farmers about management of production, marketing of agricultural commodities and provides a solution to other problems they experience.
- The study would thus have the impact of increasing the availability and widen distribution of basic life sustaining

commodities. There would be strategies designed to solve the problems experienced by communities in raising levels of living, including the provision of more knowledge, greater attention to capacity building and skills transfer. All these do not only enhance the material well-being but also generate greater individual and national self-esteem. The study would hopefully equip communities with the information of marketing of agricultural commodities.

- After disseminating the findings of the study there would also possibly be improvement in the provision of technology-based information. This could be achieved by implementing the integrated approach; the department of agriculture would work with research stations and non-governmental organizations to help farmers. Francis (1995:6) mentioned that small-scale farmers and smallholdings are important springboards for development, provided appropriate knowledge about management of resources, storage and marketing is applied and access to credit and marketing facilities is also provided.
- With the above possible value of this study communities would be subsequently empowered to adopt technology, without using expensive inputs like making compost using waste products, crop rotation, and irrigation schemes so that they could produce throughout the year. The restricted application of inputs would reduce pollution and cut down costs.

1.7 RESEARCH METHODOLOGY

The chapter presents the procedure that was followed by the researcher.

1.7.1 RESEARCH DESIGN

The researcher utilized an exploratory and descriptive research design. Although the research design in this study is descriptive it does make use of exploratory research methods, which will be used to identify crucial variables in the study problem area. Both

qualitative and quantitative research approaches were utilized in this research. Neuman (1997: 124) defines quantitative study "as an enquiry into a social or human problem based on testing a theory composed of variables measured with numbers analyzed with statistical procedures. He defines qualitative study also as an inquiry process of understanding a social or human problem, based on building a complex, holistic picture, formed with words, reporting detailed views of informants and conducted in a natural setting."

1.7.2 POPULATION AND SAMPLE

The Phongolo district is located in northern KwaZulu-Natal; it is on the border of KwaZulu-Natal and Mpumalanga provinces. The district is near Swaziland border, and bordered by Phongolo River. The study area is divided into several agriculturally active wards: Kwa-Shoba, Dingukwazi and Mkhwakhweni, each of which is under the control of a respective Inkosi. Phongolo River supplies the area with water. There are mountains and steep slopes, which encourage a high rate of erosion and make it impossible for the community to utilize the whole area for agricultural purposes. The natural vegetation is typically subtropical. It consists of various types of grasses, which include "ingongoni", Kikuyu and spiderwebs distributed throughout the area.

The selection of the rural area under study, as the socio–cultural context of subsistence farmers is based on the pre–determined criteria. The target population of the study consisted of sixty Phongolo community members who produce and distribute agricultural commodities. Purposive sampling was used because; it permitted the researcher to select a study population that has the characteristics, which were investigated in the study.

1.7.3 DATA GATHERING METHODS

The following data gathering methods were used to collect data:

a) INDIVIDUAL INTERVIEWS

Individual interviews were conducted to get more information from the respondents, their perceptions, attitudes and basic issues. The researcher used structured questionnaires to interview individual farmers, but questions were translated in Zulu and data was recorded in English.

b) FIELD WORK

A number of field trips were undertaken to observe the methods used by rural people in management of cultivation practices, irrigation systems and management of produced agricultural commodities especially marketing.

c) DIRECT OBSERVATION

A direct observation method was also used to observe the extent to which people produce agricultural products and distribute them.

1.7.4 DATA ANALYSIS

The analysis of data, which was collected and tabulated from the questionnaires, was presented in tables and graphs that are presented later in this report.

1.7.5 STRUCTURE OF THE DISSERTATION

The study is structured as follows:

Chapter 1: This consists of an introductory chapter.

Chapter 2: This chapter comprises a theoretical framework within which the research was done, and a systematic, critical and integrated discussion of related information. The researcher used information drawn from research reports, books and journal articles. Mark (1996:109) states, "Such sources provide information on the most recent developments in a specific field."

Chapter 3: Research methodology and procedure that were used in the study are presented in this chapter.

Chapter 4: This chapter consists of data analysis and interpretation of results.

Chapter 5: This chapter comprises the discussion of results, summary of findings, recommendations and the conclusions.

CHAPTER 2

LITERATURE REVIEW ON MANAGEMENT, PRODUCTION AND DISTRIBUTION OF AGRICULTURAL COMMODITIES

2.1 INTRODUCTION

This study is about food security at Phongolo focusing on community empowerment, management of natural resources, production and distribution of agricultural commodities in that area. The researcher intends to explore various strategies used by rural communities to prevent chronical food insecurity. Starvation is determined by the availability of agricultural commodities supply, e.g. meat, crops, vegetables, milk, etc.

Rechigil (1982: 13) established the important concept of entitlement to the food security equation. He noted "starvation is the characteristic of some people not having enough to eat. It is not the characteristic of there being not enough food and enough to eat. The Agricultural Policy, of (1998: 27) emphasizes that "intensifying staple agricultural commodities production, would help to expand food access to the poor and vulnerable groups. It will also enhance participatory agricultural and rural development through strengthened support services recommended as possible options and strategies."

2.2 CONCEPTUALIZATION OF TERMS

The following concepts are briefly defined to show their relevance to the study and also to eliminate any uncertainties and possible distortions that might prevail:

a) Food security

According to the Agricultural Policy (1998) it is an access by all the people at all times to enough food for an active, healthy life.

b) Green revolution

Francis (1995:18) defines Green Revolution as "a process of mordenizing traditional agriculture. It was expected to increase agricultural productivity and rural incomes and set off self-sustaining growth in agriculture, which would then be able to provide the resources to fuel industrial development. Green revolution is based on a combination of new production inputs: seed varieties with high yield potential fertilizers, irrigation, chemical pesticides and mechanization."

c) Agricultural commodities availability

It is defined as "the consistent production of agricultural commodities and it depends on domestic food production, international importation and efficiency of food distribution, and is assessed in the light of the food requirements of the population. It therefore relies on the performance of the agricultural sector, the country's ability to import and post harvest storage, processing and distribution systems" (Agricultural Policy, 1998: 18).

d) Agricultural commodities management

According to the Agricultural Policy, (1998: 13) it refers to the "ability of households to obtain sufficient food for all members at all times, either through production for own consumption, marketing and through exchange." The chronically poor, who have variable incomes, few assets and few marketable skills and also who lack powerful advocacy, are the most vulnerable to chronic food insecurity. Transient food insecurity and such crisis may give rise to distress sales of assets, leading eventually to chronic food insecurity.

e) Agricultural commodities utilization

It refers to the "final use of food by individuals at household level. The range of household food practices, including preservation and storage, selection, preparation, and final consumption is influenced by intramaking authority. These are in turn influenced by broader social and economic changes, such as urbanization, by exposure to education and marketing" (Agricultural White Paper, 1995:11).

f) Empowerment

Young (1998:117) defines it as "a process that enables people to gain control over their own lives, center on the idea of control. Having more choices, and having a freedom to choose, is important aspects of empowerment with regard to the development of personal power. Empowerment is the gaining of an understanding of, and control over, social, economic and political forces, in order to improve one's social standing in the society. Empowerment is the development of an awareness of alternative realities, and the development of strategies for gaining access to particular resources in society. In short empowerment makes people feel in charge of what is happening around them and participate."

g) Tillage

According to Dumont (1966:14) "it is a soil preparation process, ploughing, discing or cultivating which is often done on somewhat dry soils with the result that the soil is broken up in rather large clods resulting in a generally rough soil surface. It can be:

- Pre-planting tillage which is primary tillage
- Conventional tillage
- Minimum tillage which is secondary tillage

Tillage prepares suitable seedbed, control weeds and pests."

h) Farm management

Wilsenach (2000:14) defines it "as an accurate and effective financial management, production management, record- keeping, decision –making requires detailed information regarding historical costs, yields and production."

i) Capacity building

For Gray (1998:128) capacity building refers to "people growth and development. The purpose of capacity building is the empowerment, development and transformation of communities. It is a process through which people are provided with necessary opportunities to develop skills to cope with their problems and to develop effective responses to life's challenges. Capacity building is a process, which empowers people to become involved in the different initiatives of reconstruction and to participate effectively."

j) Community development

According to Young (1994:11) the term designates "the utilization under one single program of approaches and techniques, which rely upon local communities as units of action. It attempts to combine outside assistance with organized local self-determination and effort, and correspondingly seeks to stimulate local initiative and leadership as the primary instrument of change. In agricultural countries in the economically underdeveloped areas, the major emphasis is placed upon those activities that aim at promoting the improvement of the basic living conditions of the community, including the satisfaction of some of its non-material needs."

k) small-scale farmer

The Agricultural Policy, (1998: 38) defines this irrespective of ones race, gender or scale of production. "A small-scale farmer is a land user who engages productively in agriculture either on a full time or part time basis regardless of whether agriculture forms the principal source of income."

l) Sustainable agriculture

Potgieter (1998:114) defines it "as a phenomenon that refers to farming systems which is productive, economically viable and environmentally sound over time."

m) Commercial agricultural commodities

According to Kroll (1998: 46) commodities that are produced for generating income e.g. cash crops like cotton and sugar cane explain that food trade should be exercised together with the development initiative. Such initiative must address physical *infrastructure, institutional reform and adoption of technology*, human resource as well as capital investment.

n) Intercropping

Kroll (1997:23) defines it as a system of growing different crops in the same area e.g. grows beans between sugarcane rows.

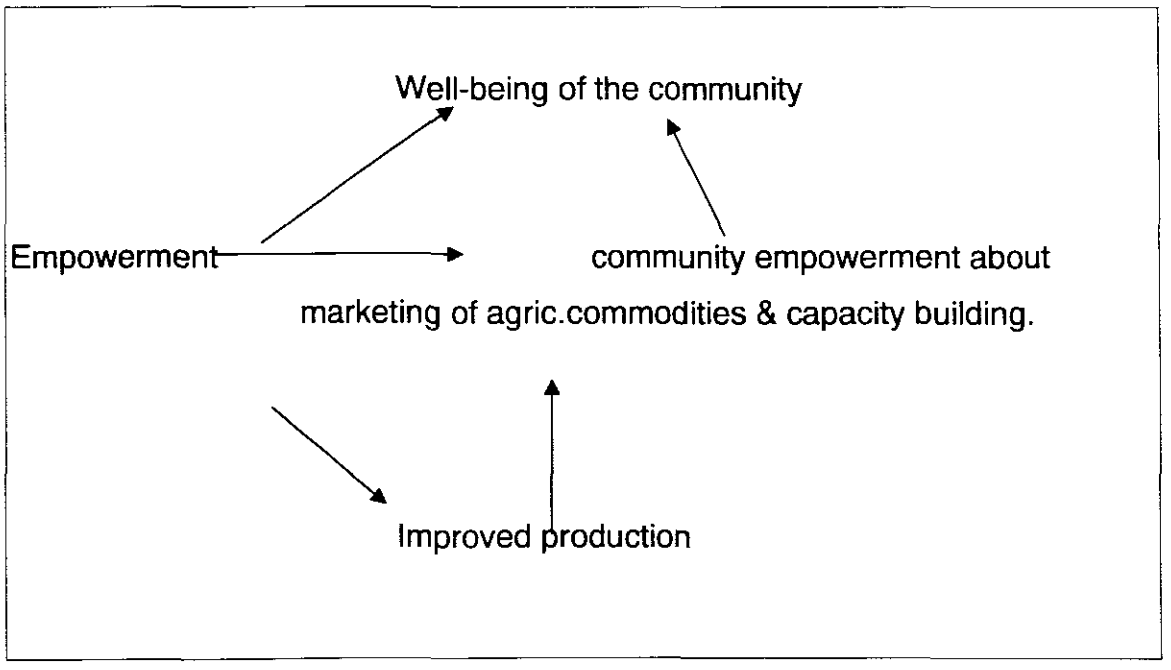
2.3 SMALL- SCALE AGRICULTURE

According to the White Paper, (1995) only three percent (4 million ha) of South Africa is considered high potential agriculture land; for this and other reasons farmers often farm in marginal lands of poor quality with limited water supplies. Twenty six percent of South African rural households currently have access to a plot of land for crop cultivation, while some twenty four percent of South African rural households' own livestock.

Ownership of agricultural and other productive equipment is limited to eighteen percent. Although agricultural production makes a small contribution to household income, over one third of rural households continue to engage in agricultural production making it the third most important livelihood tactic used in rural areas after remittances and wages from skilled jobs.

Figure 1 Sustainable development in rural community

Source (Potgieter 1998: 180)



2.4 AGRICULTURE, RURAL POVERTY AND FOOD SECURITY

Agricultural policy, (1998:8) states that "while past policies have contributed to rural impoverishment, new policies must create the opportunity for reforms, which will enable agriculture to make a much larger contribution to poverty alleviation." It is suggested that policies must be designed in such a way that they enhance national and household food security in future.

According to the Agricultural Policy, (1998:38) an estimated sixteen million South Africans are living in poverty, with its

incidence being highest in rural areas. It is estimated that seventy two percent of poor people live in rural areas, and that about seventy percent of rural people are poor. The point is, however, that poverty in rural areas is associated with agricultural policies, which persistently marginalise small-scale Black farmers as their access to resources such as land, and technical know-how was curtailed.

According to the White Paper for Social Welfare, (1995: 65) one of the encouraging developments in recent years has been the growth in support for home gardens, especially in peri-urban areas, where small plots, of vegetables in particular, could contribute significantly to both livelihoods and nutritional standards. Johnson, et al (1997: 28) noted that however, much more needs to be done, especially among the poor in rural areas, to stimulate home gardening. At Phongolo extension services have a major role to play in promoting production and, at the same time, encouraging suppliers of seed, tool and production requirements to devote more attention to this currently neglected section of the economy

Naidoo (2001: 14) identified that the contribution that production could make to alleviate rural poverty is restricted, however, by capacity building and that empowerment could be expanded. Training or education about farming and employment opportunities therefore remains the most critical issue for many rural households. Formal agriculture provides employment for about 1 million farm workers, albeit at very low incomes.

The Agricultural Policy, (1998: 62) established that some two million households derive some or all of their income from agriculture. This represents about ten million people or almost twenty five percent of South Africa's population. At Phongolo area farming is an important direct source of employment in the economy, these figures underestimate its significance, as they ignore the employment effects of agriculture's linkages with the

rest of the economy e.g. agro-processing and the food industry generally are major sources of employment.

2.5 SOME THEORETICAL MEASURES FOR SMALL SCALE FARMERS

According to Dumont (1966: 111) paradoxically, about half of the world's hungry people and the majority of those in South Africa could probably grow their own food. Low cost, simple technology packages emphasizing improved cultivation practices could increase small–scale farmers' programs to realize this potential. They would require a higher degree of administrative support than do programs for large farms, which are more highly organized at the outset.

Lenihan & Fletcher (1975: 66) also mentioned that given the appropriate support, small producers could achieve high standards on husbandry and market orientation, the support the farmers need being that:

(a) Rural people are the center of development.
(b) Sovereignty and responsibility for the use of resources.
(c) Empowerment and participation.

In addition Machado (2001:36) highlighted that in the same fashion, improved credit arrangements could result in high returns to small – scale farmers in the short term. Better credit facilities, emphasizing improvement of loan administration, would be a key element in any package of small- scale farmer assistance. Lee (1994: 24) agrees that "providing small loans to this group for productive purposes is a promising new approach to and income generation." Although at relatively high administrative demands tend to limit expansion of such schemes in the short term, they could make an important contribution to reducing hunger and poverty in the longer run.

2.6 PROVINCIAL DISTRIBUTION OF POVERTY

The extent of poverty varies among South Africa. The Eastern Cape and the Northern Province have by far the highest poverty rates. In these provinces, almost three-quarters of the population are poor. According to the White Paper for Social Welfare, (1995) survey the average monthly return or wage is two hundred or less, which is the main reason the agricultural sector has been identified as the second best option. Ramphele (1989:236) established that a minimum of forty five percent of the self-employed earn an income lower than the Supplemental Living Level poverty line, set at two and twenty rands per month.

According to the Social Welfare White Paper for Social Welfare, (1995:20) seventy six percent of the self-employed earn less than the Supplemental Living Level and these are women. Current policies aimed at improving the agricultural sector need to be better targeted as the most vulnerable segments of the informal sector. Agriculture is important in employment creation, since unemployment is a significant contributor to poverty. Unemployment rates tend to be highest in rural areas, among women and youth.

2. 7 THE MARKETING OF AGRICULTURAL PRODUCTS ACT, 1996 (ACT NO 47 OF 1996)

The agricultural Policy, (1998:14) explains that the Act, which came into effect in January 1997, was based on the view that state intervention in agricultural markets should be the exception rather than the rule. The act does provide for a certain number of limited interventions, which include the collection of levies, the conducting of pools, the keeping of records and returns, export controls and compulsory registration. As a result of deregulation, future markets in agricultural commodities were established by the private sector to provide producers, processors and traders with a means to manage their price risk.

This new mechanism has already shown its worth, notably in enabling maize-market participants to adapt successfully to the difficult market conditions of 1997/1998. The evidence of its success has been the very rapid growth during the same year of the volume in trading of maize, the introduction of maize options and wheat, and proposals to extend the facility to other commodities.

According to the agricultural Policy, (1998:48) this, together with other innovations provides depth and stability to the new marketing dispensations, which is fully in line with the government strategy for the sector. Naidoo (2001: 16) states that growing competition is also evident in fruit exports, where until very recently new exporters had been allowed only a limited share of overseas markets. Now, however many trading operations are gearing up to provide farmers with alternatives to the established exporters.

a) MARKET INFORMATION

Kotler & Armstrong (1999: 68) noted that market information is crucial to the proper functioning of any market. It promotes efficient arbitrage between markets, which is to the benefit of both consumers and producers, and the efficient allocation of productive resources. It improves the bargaining power of producers when dealing with traders and processors, and it reduces transaction costs by reducing risks. In a deregulated market, certain types of market information will be adequately and reliably provided by the private sector. However, where there is no obvious reliable source of price information, the government must take steps to give assistance.

b) FINANCIAL INSTITUTIONS CREDIT AND CASH BENEFITS

According to the Agricultural Policy, (1995: 21) "the agricultural sector is growing and constitutes the largest group of vulnerable

workers in the labor market. The restructuring of financial assistance to the agricultural sector is essential for improving the income earning potential of people involved in the sector. Banking facilities for people lacking access to them and wanting to be self-employed should be investigated more closely in South Africa to give access to credit to the poor and simultaneously make productive use of loans".

The White Paper for Social Welfare, (1995: 22) points out that with respect to micro-finance, improving access to financial markets is an important reform that could assist in the reduction of poverty. Two spheres of financing are relevant here:

1. Financing of land and financing of farm production.
2. The effectiveness of grants at provincial and local levels would depend on a number of factors. Improving access to financial markets has a positive impact only if there are latent productive opportunities that could be taken up or opened up.

c) FARM PRODUCTION FINANCE

According to the Agricultural Policy document, (1998: 50) "currently, only the manufacturing enterprises in the informal sector have any hope of receiving financial help, yet the majority of the informal sector activity occurs in services and small-scale agriculture. Programs are needed which contribute to economic growth through small medium micro enterprise development while also assisting the self-employed poor in the services and agricultural sub-sectors."

Naidoo (2001:63) noted, "The purpose of the grant fund for small farming development is to assist emerging farmers and small-scale agricultural commodities producers to develop and /or improve their production efficiency." The project is aimed at empowering the poorest of the poor and who have a food security orientation. Agriculture remains an important source of livelihood for the poor who have no source of cash income, and

those for whom self-employment is an important income source and who are the most well off in terms of income and assets. There should be provision of advice and support from the department of agriculture. Systems-oriented and participatory vocational training, which takes into, account the realities under which the poor practices agriculture is likely to have the greatest impact.

2.8 WHAT IS DEVELOPMENT ROLE?

Sustainable development in rural areas is co-operation in a spirit of partnership. This is seen as striking a balance between the environment, society and the economy, as well as between the interests of today and tomorrow. It cannot be attained by way of technocratic planning, but only by a process of negotiation between all actors who have to work.

According to Wilsenach (2000:9) agricultural sector supplies the quantity, quality and variety of agricultural commodities needed to satisfy the demand of the population and also to generate income for the unemployed rural people and to release resources for labor needed for expansion of the non-agricultural sectors." This study will focus its attention first on the basic task of providing adequate food supplies of mankind.

Production is the key to the industrial transformation of economies and the enjoyment by mankind and by ever-rising consumption in more diversified patterns. Adequacy and security of food supplies has always been primary goals of humanity. In times of need, the failure of hunting, fishing, cropping, and meat starvation affected the livelihood of people. The production of vegetables, taming and improvements of plants and animals, the management of water, the storage of food and the selling of commodities were early innovations that put man ahead of his hunger. The production of agricultural commodities has made

tremendous progress in the developed countries, which is coincidental with their industrial development.

Most of farming areas in many of these countries grow crops or improved fodder for feeding animals whose products add diversification and quality to the human diet. The importance of agricultural commodities in the material welfare of humanity goes far beyond the provision of adequate food supplies. Since food is a primary need at Phongolo, its production must have first claim of the resources available in any community at an early stage of economic development. Everyone has to be engaged in production of agricultural commodities.

Wilsenach (2000:13) mentioned, "Virtually unlimited appetite for non-food goods is a basic characteristic of humanity as income levels rise. Such goods have to be produced." A high degree of efficiency in agriculture is thus one of the keys to the high levels of economic welfare enjoyed in industrial countries. Food has no substitute. The fact that in Canada and some other industrialized countries agriculture employs less than ten percent of work force and contributes less than five percent of the total package of goods and services consumed by the population does not imply that their people are poorly fed.

Indication of the importance of production to humanity is the proportion dependent on this sector for their livelihood. Wilsenach (2000:5) states that "The Food and Agriculture Organisation (FAO) has made an analysis designed to throw light on this aspect of agriculture's contribution to human welfare, estimating the total population and numbers of people depending on production and marketing of agricultural commodities. The study confirms that in 1970 half of humanity was directly dependent upon agriculture for their life and welfare." Production is still by far the world's largest industry. Today it must provide income for almost thousands of people at Phongolo.

2.9 DESCRIPTION OF THE SALIENT FEATURES RELATED TO PRODUCTION OF AGRICULTURAL COMMODITIES

The following describes salient features of Phongolo.

a) SITE AND SITUATION OF PHONGOLO RURAL AREA

Phongolo district is located in northern kwaZulu-Natal; it marks the border of KwaZulu and Mpumalanga provinces. The district is near Swaziland border, and is bordered by Phongolo River. The study area is divided into several agriculturally active wards, each of which is under the control of an Inkosi. There are dry lands, which are not productive and also wet areas. The Phongolo River supplies water for irrigation and other streams like Mawoma and Mzinsangu.

b) DEMOGRAPHIC PROFILE

The average family in Phongolo communal land areas comprises 5 to 21 or above family members. The main features of the demographic profile are a high population growth. Adults have a low level of education and the literacy of 33 percent of educated people. Overpopulation is at the root of the plight of many rural communities.

2.10 CATEGORIES OF SUBSISTENCE FARMERS

Maree and Casey (1992:362) classify farmers in terms of economic differences, resources, personal characteristics, values, concerns and interests. There are basically four categories of households in the rural areas:

- Market –oriented commercial farmers who make a living out of crop and livestock farming. At Phongolo these are sugarcane and poultry farmers.

- Progressive small-scale landholders who adopt some recommended technology and those who sell some produce and or livestock.
- Small-scale landholders with below-subsistence production levels who usually do not sell any crops or livestock. They own community garden plots and they grow crops for household consumption.
- Resource-poor non-landholders who have no arable land or large stock.

2.11 FARM PLANNING

Successful farming is based on the following principles:

a) THE LAND

This is determined by how much of it that is good arable land to grow crops.

b) WATER RESOURCES

There must be enough water resources in the farm for livestock to drink and for crop irrigation. All activities that are performed in the farm need water. At Phongolo there are dry lands and also wetlands. Crops in dry lands can only be grown rainfall season.

c) MARKETS

It is important for a farmer to have target customers and targeted markets because agricultural commodities are perishable commodities. There must be a demand for the product. Some applied research should be conducted to make sure that there is an available clientele to be served now and in the future. It may be necessary to make product adjustments to assure satisfactory market performance.

d) SKILL DETERMINATION

Communities must be able to compete efficiently in the market place and they need to be able to stimulate farmers to assume responsibility for the development as well as the day-to-day production and management.

e) BUDGETING

Kotler & Armstrong (1999:7) asks whether the planned commodities are worthwhile financially. Farmers must be connected to institutions where they can get credit.

f) MONOCULTURE

According to Kroll (1997:13) monoculture refers to a situation "where a farmer produces one crop only, but the farmer must be sure of the target the market."

g) MIXED FARMING

Kroll (1997:14) also defines mixed farming as "a situation where the farmer produces several agricultural commodities from the farm, both crops and animal products, It is safe for farmer to produce more than one crop in case one fails."

2.12 SUSTAINABLE LIVELIHOODS

Community education is necessary for recycling of skills that are especially important with accelerated rates of change. Conservation in 'unchanged' form is a process that involves active attempts to build toward objectives as opposed to destruction of resources. If a farmer is not concerned about land conservation and fertility where will the lands for production for the future be?

According to Potgieter (1998: 21) sustainable development could be defined as development, which meets present needs without compromising the ability of future generations to meet their needs. The community must be the center of development. Disasters are serious disruptions of the functioning of the agricultural sector causing widespread fertility and environment losses. Further, the use of environmental resources and their impact on livelihoods of the poor needs to be more fully understood. Effective environment management should enable equitable access to resources, so that the situation where the poor are forced to adopt unsustainable survival tactics can be avoided.

2.13 CAPACITY BUILDING IN MANAGEMENT OF PRODUCTION

South Africa's rural communities believed themselves to be good and industrious agriculturists, able to choose the best land and know the requirements of various crops. They chose their fields partly by the type of natural vegetation. The real test of the land was to try it; only if there were a good yield would the primary crops be planted in the second year. Only very general rules are used for soil selection e.g. the best land for peas is virgin soils, groundnuts are grown on sandy soil and maize requires moist soil or soil which can hold moisture for a long time.

Kroll (1997: 16) emphasizes "intercropping serves as insurance if one crop fails. Another characteristic of rural community or subsistence farmers is lack of flexibility. Individual variations and improvisations are not wide. Supplies of seed or outside commitments require treatment of cultivation or techniques. The absence of rigid rules allows for considerable adaptability, as in the alteration of the usual crop succession plan in the event of unusually good or poor yields in any plot."

a) IRRIGATION

Rural communities must be empowered about irrigation so that they can produce throughout the year, since their production is seasonal. Natural rainfall must be supplemented by irrigation to create favorable moisture condition so that moisture is not a limiting factor to crop growth during any part of the growing season. Dalton (1982: 69) explained, "Modern irrigation is concerned with the conception, planning, construction and operation of projects to provide the catalyst of agricultural development. It is not a single subject, but rather a combination of subjects closely related e.g. administrative, economic, above all intensely human fields. In the arid fields production is impossible. "

According to Rechigil (1982:25) "supplementary irrigation does not only increase yields per acre, but also stabilizes the entire basis of farming. On a national average basis, the yield per acre is approximately doubled when switching from rainfall (dry farm) to supplementary irrigation. Overall irrigation efficiencies tend to vary; the achievement of increased irrigation efficiencies is intended to double the existing areas. Achieving the desired increase in irrigation efficiencies will require, particularly in most of the rural areas, a well-directed and informed educational campaign to convince farmers of the practical benefits involved. Irrigated agriculture leads to flexibility and diversity of crop production, which permits shifts in production to meet changing requirements."

Kroll (1997: 146) states "some crops are particularly sensitive to moisture stress at certain critical growth stages. If a crop fails to flower, the adequate supply of water during the remainder of growth cycle will be in vain." The decision to acquire an irrigation scheme should be based on both the primary resources of

climate, soils and water and the secondary resources of capital and labor.

Rural communities must adopt irrigation technology. Where irrigation water is available in the dry season, yields will also be higher. More than one crop a year is harvested in certain well-favored areas even more than three different kinds of crops might be produced, but this needs considerable farming skill. Where irrigation supplements rainfall, multiple cropping is easier than where there are two rainy seasons dictating the planting seasons.

b) TILLAGE

According to Gray (1998:128) "rural community has to be involved in the different initiatives of reconstruction and participate efficiently." Capacity building does not emphasize that extension workers must pour resources to the community but that capacity building should be tied to people capacity and the inclination to use and build knowledge; skills, information and support structures. Rural communities should be capacitated with practices and systems that will enhance production and improve socio- economic well-being of the community.

Kroll (1997: 18) established that "tilling the soil has been the central part of crop husbandry since the dawn of recorded history. Tillage loosened the soil so that seeds of crops could be planted." Tillage destroyed weeds in the field prior to planting and, after the crop emerged was used to destroy weeds growing and competing with the crop. The practice could be applicable to Phongolo because communities cannot afford to buy pesticides. Rechigil (1982:256) noted that tilling the soil buries plant residues and disrupts the habitat of insects living in the soil. Entomologists and pathologists consider tillage to be a means of reducing the incidence of damage from certain insects and disease pests.

According to Chambers, Pacey & Thrupp (1993: 37) "tillage incorporates plant nutrients applied to the soil surface and increases the rate of decomposition of organic matter contained in the soil." Tilling the soil buries crop residues and is a common sanitation measure used for the control of insects and diseases especially in wet areas of Phongolo. Tillage can be done after spreading compost; small-scale farmers could till soil-using handhoes.

Rural communities do not have enough credit to improve production they should be capacitated and empowered to use the resources they have. There is no need for buying pesticides and herbicides but each community must adopt these agricultural practices. Since communities lack information, after cutting grass and shrubs or weeds usually they burn it instead of using it to prevent erosion. In the stubble mulching system, much of the crop residue remains on the soil surface to minimize wind erosion and helps to reduce the rate of evaporation of soil moisture. Stubble mulching covers soil and protect it from wind erosion and that is part of resources management.

Rural communities should be empowered to practice agronomic practices in order to obtain maximum yield. Tillage loosenes the soil so that seeds of crops could be planted. Engelke (2000: 16) emphasizes that tillage is performed before the crop is planted and that is called primary tillage. During the fallow period, moisture is conserved so that utilizing two years rainfall produces the one crop. For this practice to be effective, weed growth must be controlled with several cultivations during fallow period.

After the dust bowl period, stubble-mulching techniques were developed for crop production. Organic herbicides developed were first used as a supplement for cultivation, killing weeds that were growing in the crop row and thus not easy to remove mechanically. As the communities adopted the use of herbicides

as a supplement for cultivation, these also were used to eliminate some tillage operations, primarily post-emergence cultivation.

According to Borton (1966: 87) "today, herbicides that will control nearly all weeds in the crop for a period that spans the entire growing season are available." Tillage loosens the soil and buries plant residues. Reduced tillage systems offer some definite advantages, many of the reduced tillage systems leave the soil covered with mulch residue from the previous crop or farm manure applied to the field or from weeds that were killed before planting the crop. This mulch cover reduces the energy of raindrop impact on the soil surface, slows runoff and, in turn, reduces the amount of soil loss from water erosion. Rural communities also could be trained to use crop residues to fertilize the soil rather than buying manure. If communities use expensive fertilizers, these could harm their crops if considerable use of them added to the soil.

c) COMMUNAL LIVESTOCK SYSTEMS

Maree & Casey (1993:361) estimates that "approximately two thirds of the world's domesticated ruminants are found in developing regions where they produce 30 percent of the world's meat and 20 percent of the milk. The efficiency of meat and milk production is only a quarter of that in developed communal farming due to low levels of nutrition and management in communal grazing areas. Only 84 percent of the communal land in Southern Africa has a potential only for grazing; livestock production contributes little to the cash economy". Lenihan & Fletcher (1975: 86) noticed that lack of farming knowledge and poor managerial ability is the principal causes of low adoption rates of sound livestock production practices.

Maree & Casey (1993: 362) explain the sustainability in terms of "the complex interaction of biological, physical and socio-economic factors. Biological factors include genetic resources to

be strengthened, long – term pesticide control and balanced production systems involving both crops and livestock. Physical aspects include soil and water management. Socio-economic factors also act to promote or inhibit sustainability, depending on the abilities of governments in the formation of appropriate and timely policy decisions as well as delivery of credit, inputs and transport. Agriculturists need to think about fundamental improvements in agricultural and rural development."

According to Naidoo (2001: 63) basically the "hope of sustainable agriculture is for ongoing production to maintain an equilibrium with the changing demands of a growing population. Separating the components of agricultural systems that have existed for thousands of years, to create specialized grain and livestock operations requires innovation that is superior to that traditionally used in all of its effects." The only tool is empowerment, capacity building in order for farmers to adopt new technology.

Rural communities can make manure from the resources the communities have. The interaction of crops and livestock makes increases in soil organic matter feasible and forage crops could be introduced into rotations to build up soils, thus reducing the necessity of purchased inputs. Maree & Casey (1993: 68) indicate that crop "innovations that free up labor could make it possible for the producer to enter into some particular aspect of livestock production or other activity. The return of livestock to the crop farm also gives back to the producer the flexibility by which sales can be diversified, both in terms of products."

d) NEED FOR IMPROVED TECHNOLOGY

Machado (2001: 28) defines the "basic goal of development as a progressively higher level of per capita consumption. These results, in a sustained basis, from a progressively higher level of per capita production. Productivity is a function of improved technology and a more capable worker, regardless of institutions

or decision-making processes, regardless of political or cultural environment, regardless of time or place." Ngidi (1997: 20) states that everything else maybe propitious for sustained development, but without the farmers or herdsmen's acceptance of technological change is a social process.

Ngidi (1997: 20) further describe technology as a "set of problem solving ideas, skills and devices." Lee (1994: 36) also adds, that "development is the integration of new technology into an already ongoing socio-cultural process." What we are, therefore, concerned with, is the means whereby technological change maybe introduced into Phongolo rural agricultural commodities production systems. Change requires a package of improved technology and a farmer or herder willing to adopt and capable of managing it."

e) CROP ROTATION

According to Kroll (1997: 29) "crop rotation is much more successful for root-infecting specialized pathogens that cannot survive in soil, as they are frequently starved out when non-hosts are planted for one or more years." Extension workers have long recommended crop rotation to vegetable growers, both in home gardens and in large commercial operations as an inexpensive, easy method of decreasing crop losses to root diseases.

Kroll (1997:283) criticizes "vegetable producers because they frequently grow several crops that are botanically unrelated, and thus suitable rotations are not difficult to arrange. Continuous cropping of vegetable legumes has frequently resulted in decreased yields because of increased losses to root diseases. The majority of the people in rural areas plant certain crops in one and the same field for more than 10 years. Rotation of beans, with corn, wheat or barley has reduced root disease severity and concurrently led to increase in yields. Kroll (1997:

21) emphasizes that "monoculturing each crop gave the poorest yields and resulted in severe root disease. Crop rotation is most effective for insects that are restricted in feeders, that are sluggish or have a limited ability to migrate, and that spend a relatively long time in the feeding stage. Crop rotation is the best, and sometimes the only, means of managing certain insects." Weed control by crop rotation is more likely to be successful when the growth and characteristics of a crop are in sharp contrast to those of the previous crop and the predominant problem weeds.

f) SOIL FERTILITY AND CROP PRODUCTION

Perhaps the most fragile and limiting among these resources is the soil, which could be maintained in a productive state over an indefinite period with proper management but which could be also destroyed within a few years by poor management. Early literature on crop rotation stressed the importance of rotation to maintain or improve soil fertility. Nutrients and organic matter were returned to the soil primarily with farm manure and the growing of leguminous crops in a rotation.

According to Chambers, Pacey & Thrupp (1993: 16) the maximum benefits of green manuring crops are obtained by storing organic matter and nutrients in the soil improvement crops and releasing the nutrients by the decomposition of the organic matter at the time they were of the most benefit. Rotations provide additional benefits in that they may equalize the drain on the supply of the soil. Kroll (1997: 17) agrees" that crop rotation with legumes or grasses is considered to be very beneficial for maintaining soil fertility. With the availability of organic fertilizers in modern agriculture, the need for crop rotation purely from the standpoint of soil fertility has diminished."

2.14 THE IMPACT OF GREEN REVOLUTION

Subsistence farmers should be empowered to utilize hybrid seeds not to rely on indigenous methods of producing agricultural commodities, because hybrid seeds could increase yield. According Rechigil (1982: 37) the impact of Green Revolution on wheat and rice production is the increase in yields per unit of land. Increasing yields have made rice and wheat more profitable for farmers than some of the crops. More land has been brought to cultivation of these crops.

The revolution has also facilitated significant expansion of irrigation and multiple cropping because the new crop varieties have shorter growing periods and reduced sensitivity to day length and could therefore be grown in different latitudes. Agriculturists estimate that between one- third and one-half of the crop areas are planted with high yielding varieties.

According to Rechigil (1982: 37) area grown with improved maize varieties and hybrids in developing countries runs into millions of hectares. Major efforts to develop high-yielding technologies for many other food crops grown in under developing country conditions have begun more recently, and it is too soon to estimate the impact on global production. Results from farm trials of improved varieties and cultural practices for various food crops show great potential for yield increases.

The green revolution has clearly enabled many developing countries to achieve impressive rates of growth in national food grain production since the mid 1960s. At the same time, however, the variability of national foodgrain production has also increased. Producers have widely adopted high-yielding crops irrespective of farm size and tenurial status. In many regions suited for the high yielding varieties, low-income farmers have adopted them to at least the same extent as larger farmers, and the most recent studies suggest that net gains per unit of land

tend to be larger on smaller farms. Thus the green revolution has contributed to a considerable change in regional income distribution in some countries.

The Green Revolution has primarily benefited producers who control optimal production environments or who have access to such environments, irrespective of farm size, and in some countries, the larger and better-off farmers tend to control the best production environments. In many other areas, including those where good soil has been distributed through land reforms, low-income farmers often control such environments.

The most important lesson from these findings is that soil quality, access to irrigation water, and other aspects of the physical production environment are much more important in determining adoption patterns than farm size. The impact of technological change on poor farmers depends very much on institutions and policies. Although in many developing countries small farmers generally use available land more efficiently than those with larger farms do, policymakers often see large farms as more desirable.

2.15 CONSERVATION OF RESOURCES

According to the Agricultural Policy of (1998: 45) "South Africa is running short of resources, especially water and land. Rural communities need to be empowered about depletion of resources. There are few archaeological records of the development of South African agriculture over the millennia but it is well established. South African agricultural methods and implements have changed little over thousands of years. Prior to the nineteenth century, when there was an abundance of land in relation to population, methods like fallowing, crop rotation, soil fertilization and terracing sustained peasant farmers for many generations."

Land like water is a finite, changeable and vulnerable resource. If communities do not make this awareness of the fragility of natural resources a fundamental element when planning methods of agricultural land and resource exploitation, they will continue to deteriorate at a greatly increased rate. There is annual loss of valuable topsoil especially where there is overgrazing. Environmental degradation reduces cropland and the problem of low agricultural production results from soil erosion. Communities could grow grass to reduce soil erosion.

2.16 MANAGEMENT OF AGRICULTURAL COMMODITIES

Some nations historically became specialized producers of agricultural commodities and able to export them around the world. Agricultural commodities export e.g. coffee and sugar for example; have occupied a large part of international trade. This process gave the impression that export activity can be successful with any product in the market.

Agricultural products, the essential part of our daily diet, are the means for survival. To survive there must be improvement in production. Kotler (1999:115) adds, "Knowledge of economic enviromrent is also important."

a) RESOURCES

There must be at least one person in the community who knows the resource situation, the people and their interests and the person understands their life style. Rural communities made mistakes of producing agricultural commodities without identified target market or situational analysis. In rural communities, they usually grow same crops. The question is who is going to buy because they all have cabbages? There must be something to work with. The existing resources could be mobilized to secure that which is lacking. It is the responsibility of the producers to

identify needs that is capital, technical assistance, communication technology or political support.

b) MARKET

Naidoo (2002:18) suggests, "There must be a demand for the product. Some applied research should be conducted to make sure that there is an available clientele to be served now and in the foreseeable future." It may be necessary to make product adjustments to assure satisfactory market performance.

c) INFRASTRUCTURE

Transport is important to facilitate market, how do the producers sell, transports their produce to the market. If the communities are far from market there should be transport of agricultural commodities. Usually rural communities are transported by government trucks to the agricultural show.

d) SKILL DETERMINATION

Rural communities must be able to compete efficiently in the market place and they need to be able to stimulate farmers to assume responsibility for the development as well as for the day-to-day production and management. In addition to the necessary recycling of skills that are especially important with accelerated rates of change, education is indispensable.

e) COMMUNITY INVESTMENT

According to Naidoo (2002:64) community investment is a means; its purpose is to seek not only to make capital available but also to encourage the types of efforts and institutions that would make the best use of capital in the community. A successful program of community investment would stimulate the demand for capital by supporting the formation of community groups and encouraging existing groups to plan more projects."

2.17 CONSTRAINTS FACED BY SMALL-SCALE FARMERS

The following problems are problems experienced by small-scale farmers.

a) MARKETING

Ewang (2000: 47) noted that "the marketing of agricultural products begins at the farm when the farmer plans his production to meet specific demands and market prospects. When the product has been harvested, the farmer cannot usually go direct to the consumer. Firstly it is likely to be located some distance from the place of consumption, and hence transport is required to bring the product to the right place. Secondly, agricultural production is generally seasonal while consumption is regular and continuous throughout the year."

According to Naidoo (2001: 56) "storage is required to adjust supply to demand. Secondly, when a product has just grown is rarely in the form acceptable to consumers. It must be sorted, cleaned, and processed in various ways, and must be presented to the consumer in convenient quantities. Finally, the farmers expect payment when his produce leaves his possession." Some financial arrangement must be made to cover all the various stages until the retailer sells the product to the consumer.

It is marketing which provides these services between production and consumption. As the economic development of a country proceeds, the gap between the farm and the consumer widens and the tasks of marketing become more complex. Modern methods of storage and processing, including refrigeration, and forms of retail distribution are required. Storage and processing facilities must be part of the marketing process if the system is to be used to full advantage. Retail enterprises have a direct link with the consumer and tend to reflect the needs of the consumer.

a) EXCHANGE FUNCTIONS

Naidoo (2001:52) discussed the following exchange functions:

- **BUYING**

  According to Naidoo (2001:57) the marketing concept holds that the needs of the customer are of paramount importance. A producer could be said to have adopted a market orientation when production is purposely planned to meet specific demands or market opportunities. Thus a contract farmer who wishes to meet the needs of a food processor manufacturing sorghum-based malted drinks will only purchase improved sorghum seed.

  The buyer's motive is the opportunity to maintain or even increase profits and not necessarily to provide, for example, the best quality. Improving quality inevitably increases the associated costs. In some cases the markets' insensitivity to improvements in quality, beyond some threshold level, does not earn a premium price. Under such circumstances, the grower who perseveres and produces a 'better product', is not market oriented since he/she is ignoring the real needs of the consumer.

- **SELLING**

  This is probably the one which people find least difficulty in associating with marketing. Kotler (1999: 6) suggests that: "most firms practice the selling concept when they have over capacity. Their immediate aim is to sell what they can make rather than to make what they can sell." There is no denying that 'high pressure selling' is practised, where the interests of the consumer are far from foremost in the mind of the seller. This is not marketing.

Enterprises adopt the marketing philosophy as a result of becoming aware that their own long-term objectives could only be realized by consistently providing customer satisfaction. Whereas selling might create a consumer, marketing is about creating a customer. The difference is that marketing is about establishing and maintaining long-term relationship with customers. Selling is the part of marketing in the same way that promotion, advertising and merchandising are components, or sub-components of marketing mix.

b) PHYSICAL FUNCTIONS

- **STORAGE**

  Naidoo (2002) states "an inherent characteristic of agriculture is that it is seasonal whilst demand is generally continuous throughout the year. Hence the need for storage to allow a smooth, and as far as possible, uninterrupted flows of product into the market." In agriculture, and especially in rural areas, supply often exceeds demand in the immediate post-harvest period. The glut reduces producer prices and wastage rates can be extremely high. For much of the remainder of the period before the next harvest, the product could be in short supply with traders and consumers having to pay premium prices to secure whatever scarce supplies are to be had. The storage function is one of balancing supply and demand.

- **TRANSPORTATION**

  The transport function is chiefly one of making the product available where it is needed, without adding unreasonably to the overall cost of the produce. Adequate performance of this function requires consideration of alternative routes and types of transportation, with a view to achieving

timeless activity, maintaining produce quality and minimizing shipping costs.

Effective transport management is critical to efficient marketing. Whether operating a single vehicle or a fleet of vehicles, transportation has to be carefully managed, including costs and monitoring operations on different road types, fuel and lubrication consumption and scheduled and remedial maintenance and repair. Skillful management of all aspects of vehicle operations could also make a substantial contribution to efficient marketing especially with respect to optimum routing. Scheduling and loading and off-loading; maximization of shift hours available, maintaining the vehicle fleet at an optimum size, taking account of time constraints on delivering, and collection times and judicious management of vehicle replacement and depreciation are all very important considerations.

- **PROCESSING**

Rural people must be trained to add value to what they are producing. People who live in urban areas buy commodities from rural areas and add value to them. Therefore people in rural areas must be educated about value adding. Most agricultural commodities are not in a form suitable for direct delivery to the consumer. Naidoo (2002:63) observes that: "the processing function is sometimes not included in a list of marketing functions because it is essentially a form changing activity." However, it is for this very reason that processing ought to be included as a marketing function. The form changing activity is one that adds value to the product. Changing green coffee beans into roasted beans, cassava into gari or livestock feed, full fruit bunches into palm oil or sugarcane into gur increases the value of the product

because the converted form has greater utility to the buyer.

a) FACILITATING FUNCTIONS

The following are facilitating functions:

- **STANDARDIZATION**

Naidoo (2002: 69) defines "standardization as being concerned with the establishment and maintenance of uniform measurements which produce quality and /or quantity. This function simplifies buying and selling as well as reducing marketing costs by enabling buyers to specify precisely what they want and suppliers to communicate what they are able and willing to supply, with respect to both quantity and quality of the product. In the absence of standard weights and measures trade, either of these become more expensive to conduct or impossible altogether.

- **FINANCING**

According to Naidoo (2002) in almost any production system there are inevitable lags between investing in the necessary raw materials and receiving payment for the sale of commodities. During these lag periods some individual or institution must finance the investment. The question of where the funding of the investment is to come from, at all points between production and consumption, is one that marketing must address. The challenge to marketing is to somehow channel what income is available into effective demand. Marketing is also concerned with the financing of the enterprise itself.

- **RISK BEARING**

In both the production and marketing of commodities the possibility of incurring losses is always present. Physical risks include the destruction or deterioration of the produce through fire, excessive heat or cold, pests, flood, earthquakes etc. market risks are those adverse changes in the value of the produce between the processes of production and consumption. A change in consumer tastes could reduce the attractiveness of the produce and is, therefore, also a risk. All of these risks hinder marketing for the small – scale farmers.

- **MARKET INTELLIGENCE**

Marketing decisions should be based on sound information. The process of collecting, interpreting, and disseminating information relevant to marketing decisions is known as marketing intelligence. The role of market intelligence is to reduce the level of risk in decision-making. Through market intelligence the seller finds out what the customer needs are. The alternative is to find out through sales, or the lack of them. Marketing research helps establish what products are right for the market, which channels of distribution are most appropriate, how best to promote products and what prices are acceptable to the market. As with other marketing functions, the seller or another party such as government agency, the ministry of agriculture and food, or some other specialist organization could carry out intelligence gathering. What is important is that it is carried out.

2.18 SUMMARY

This chapter comprises a theoretical framework within which the research was done, and a systematic, critical and integrated discussion of related information.

CHAPTER 3
RESEARCH METHODOLOGY

3.1 INTRODUCTION

According to Van Velzen (1998:66) methodology is merely a framework within which the data are placed so that the meaning maybe seen more clearly. Research methodology basically consists of the steps that are followed by a researcher in his attempt to describe measure, explain, predict and control social phenomenon. No single fieldwork method was found to be suitable to identify methods used in this study and constraints in management of agricultural commodities. Instead, the study utilized an integrated methodology.

Triangulation was applied in the study, which is the use of more than one imperfect data collection tool to reduce potential sources of error. The purpose of triangulation as "the idea of triangulation in a qualitative study is to increase accuracy. The study utilizes mixed techniques, a wide range of tools to collect data. These tools ardesigned to the specific requirements of the study, structured interviews, observation, focus group and quantitative survey."

PROCEDURE

Regarding the procedure the following will be explained:

3.2.1 IDENTIFICATION OF THE RESEARCH PROBLEM

The identification of the research topic: "empowering rural communities to manage natural resources, production and distribute agricultural commodities" was developed because of the following reasons:

It was an attempt to explain the importance of capacity building and empowerment of rural communities in agriculture.

- it helped to explain the impact of agriculture in rural areas
- It facilitated an understanding of challenges faced by rural communities with regard to sustainable development.

It was used as an attempt to resolve key problems associated with management of production and distribution of agricultural commodities.

3.2.2 LITERATURE REVIEW

The aims of literature review are the following:

Documents provide the researcher with new ideas:
It reveals methods and techniques of handling problematic situations
Ntuli (2000: 56) said that "through literature review the study maybe seen in historical and associational perspective in relation to earlier and more primitive attacks to the problem."
Books, reports, agricultural policy documents, journals and articles were sources of information that were consulted. The following topics were surveyed for information that could inform the study:

- Importance of agriculture.
- Management of production.
- Constraints faced in adoption of technology
- Marketing of agricultural commodities.
- Food security.

3.2.3 TARGET POPULATION AND SAMPLE

According to Mark (1996:187) sampling is described as the selection of a proportion of elements from a whole population of these elements. The data of a sample is also more manageable than that of an entire population. Sampling also makes it possible for a researcher to fulfill the requirements of a research, which

requires fixed numbers of elements. Purposive sampling was used in this study, because it permitted the researcher to select a study population that has characteristics of the investigated study.

The target population comprised fifty small-scale farmers who produce and market agricultural commodities. Mark (1996:239) mentioned "if a sample is too small it might be impossible to make sufficient, precise and confident generalizations about the situation in the parent population or to obtain statistical significance." The small- scale farmers were divided into three groups:

1. Sixteen farmers produce sugarcane,
2. Five are involved in poultry projects
3. Twenty nine were vegetable producers.

The sugarcane farmers were selected from two different wards Ntshangase ward and Simelane ward, because they are in different associations. Poultry project respondents were selected from two different projects, that is Celimpilo and Zenzele projects. Vegetable producers were selected from four different community gardens. Extension officers helped the researcher to select respondents.

3.3 DATA COLLECTION TOOLS

The following data tools were utilized to collect data:

3.3.1 QUESTIONNAIRES

The collection of data adhered to two types of methods: self-administered questionnaires and interviews. The questions were translated into Zulu because the majority of the respondents are Zulu speakers and data was recorded in English. Mark (1996:246) pointed out that a "well-constructed questionnaire allows for greater uniformity of response. It also allows for

frankness and honesty, it is inexpensive, self-administering and can be made anonymously."

The questionnaire comprised both open-alternative and fixed - alternative items. An advantage of fixed–alternative items is that they are easy to code and tabulate though their greatest weakness is their superficiality. Questions were improved by adding additional response categories or probing. Mark (1996:247) defines an open-alternative item as one in which the respondent is free to respond in his or her own words. The question supplies a frame of reference but puts a minimum of restraint on the respondent's answer.
The questionnaire was developed in order to obtain information about the following:

1. Access to land and utilization of land;
2. Adoption of technology;
3. Crops grown and season of growing;
4. System of keeping livestock;
5. Management of production;
6. Marketing of agricultural commodities;
7. Information about marketing of agricultural commodities;

service of community workers in empowering rural community.

According to Mark (1996:247) the major advantages of open – alternative items are their flexibility and depth. In an interview they allow the interviewer to probe into the respondent's attitudes and knowledge that may help to explain in his or her answer in detail. An open- alternative item provides background information.

3.3.2 INTERVIEWS

A combination of structured and unstructured interviews was conducted during household visits, farmers' survey, visits to community gardens and local sugarcane farmers. Interviews

identify problems, benefits, adoption and use of technology associated with management of agricultural commodities.

3.4 QUALITATIVE RESEARCH METHODS

Neuman (1997) "defines qualitative study as an inquiry process of understanding a social or human problem, based on building a complex, holistic picture, formed with words; reporting detailed views of informants and conducted in a natural setting. Data are in the form of words from documents, observations and transcripts. As the development of theories and understanding it promotes of better self-understanding and increases insight into the human condition. It seeks to understand a situation by focusing on the total picture rather than breaking it down into variables. The goal is a holistic picture and depth of understanding rather than a numerical analysis of data."

3.4.1 INFORMAL INTERVIEWS WITH KEY INFORMANTS

Information is obtained from persons who are in the position of knowing a community's needs and service use patterns. Mark (1996:239) states, "Key informants are the kinds of individuals who are familiar with a community, its residents and their needs and available services. Interviews permit the researcher to summarize the characteristics of different groups or to measure their attitudes and opinion toward some issue. "

The researcher requested permission to conduct research from Inkosi S. The arrangements were made to visit farmers. Informal interviews were held at Phongolo agricultural office on 3rd of July 2002, with the sugarcane extension worker who is responsible for sugarcane farmers, garden extension worker who is responsible for poultry and garden projects and chairpersons of different projects. The key informants were agricultural extension workers, and the aim of the meeting was to introduce the researcher to farmers, and to clarify about the research, its duration and about

dermacations of the wards. The chairpersons of different projects were selected because they had direct contact with the target population. Excellent co-operation was received from all the people concerned.

3.4.2 FIELD RESEARCH

This is another tool that was utilized by the researcher to collect data because it is an inductive data gathering approach. Neuman (1997:19) established that it could be used to study culture of social worlds acquiring information about specific conditions in the communities from which they produce and sell agricultural commodities. The researcher interacted directly with respondents, observed activities like traditional methods of seed storage, tillage methods and livestock husbandry.

The key informant tool was found by the researcher to be an appropriate channel of becoming familiar with the study area. Direct observation relies on field experience and visual indicators of the researcher, applied in planned but unstructured visits to a Phongolo rural community, especially in sugarcane fields and community gardens.

3.4.3 DIRECT OBSERVATION

The observation technique was also utilized. The observer simply observes and records events as they naturally occur. No attempt is made to alter the situation in any way, because those being observed are not aware of the observation. The researcher observes but does not participate in the activity being observed. In this particular study, the researcher observed farmers in their natural settings. It was a direct observation of events in progress, the degree to which technology is adopted and used. This observation gave rise to probing about certain activities of areas of interest.

The researcher was able to gain a comprehensive perspective on actions in management and marketing of production. Infrastructure, implements, and the size of the land-utilized, markets and irrigation systems were all observed. Direct observation was applied when the researcher visited different community gardens and poultry projects. Information that is relevant to research objectives was recorded. Direct observation also gave the researcher a deeper understanding and a comprehensive perspective on the phenomenon studied. It exposed the researcher to problems experienced e.g. lack of implements, irrigation systems and the researcher was able to take a few photos.

3.4.4 INFORMAL DISCUSSION WITH SUGARCANE FARMERS

Discussions took place on the 7th of July 2002. Discussion is a social survey technique based on the premise that many opinions expressed collectively are better than one. This method involves probing. It allowed the researcher to be flexible, because farmers came up with useful data, which was not, included in the questionnaire e.g. the issue of expenditure for irrigation system. It generated information that the structure of the questionnaire did not pick up. The central discussion was about management of production, from the stage of tillage, application of fertilizers, harvesting and marketing at Illovo sugar-mill. After the discussion the researcher visited sugarcane fields accompanied by an extension worker. The transport used to transport sugarcane from loading zone to sugar-mill was also observed. Arrangements were also made to visit individual farmers at their respective homes.

3.4.5 FOCUS GROUP

Focus groups could be used to test new research, identify key informants, see if a particular way of defining a problem is

accurate, and see if the perspectives of research participants agree with the findings gathered from other sources of data, and pretest questionnaires or an interview (Mark 1996:240). The extension worker introduced the researcher; and the researcher explained the purpose of the study. The respondents were encouraged to participate and give their views.

The focus group is a useful tool in exploratory research because it generates new ideas about existing situations. A focus group discussion was held at Mgazini tribal court on the 9th of July 2002, where seven women were available. They participate in community garden projects and poultry projects. We held interviews in Zulu but the data was recorded in English. The researcher focused on management practices e.g. and whether they are keeping livestock using extensive or intensive system or not, and the distribution of chicks if they are ready for market.

A focus group is a method of qualitative research, which is used to obtain in depth information about a problem, controversial, sensitive or specific issues by probing. In most cases people were interested in the question of what are main problems one experiences in the distribution of commodities. The question was asked in order to find out directly from the respondents the major constraints they experience.

3.5 QUANTITATIVE METHODS

The following quantitative methods were used to collect data:

3.5.1 SUGARCANE PRODUCERS' SURVEY

Neuman (1997:121) defines quantitative study as an "enquiry into a social or human problem, based on testing a theory composed of variables measured with numbers and analyzed with statistical procedures, in order to determine whether the predictive generalization of the theory holds true. It is a research that is aimed at testing theories, determining facts, statistical analysis,

demonstrating relationships between variables, and prediction. This is usually referred to as quantitative. Standardized methods and techniques like surveys and structured interviews are used to realize these ideals of diagnosis, treatment, control and prediction."

Fifteen sugarcane farmers were interviewed using the individual face-to-face interviews. The survey was conducted from 11 July to 16 July 2002. The survey was conducted to obtain descriptive information about production and marketing of sugarcane. The information would also be helpful to emerging farmers. The interview schedule was translated into Zulu and only those aspects of the sugarcane survey relevant to the study were discussed, even those that were not included in the questionnaire were still useful.

3.5.2 HOUSEHOLD SURVEY

The researcher conducted a face-to-face interview to avoid misinterpretation of questions left unanswered. The interviews were conducted from 17 to 25 July 2002. The researcher visited individual farmers at their homesteads.

3.6 SPATIAL DELIMITATION OF THE STUDY

The method of research adopted in the research-involved delimitation of the area, the demarcation of the sample and the techniques for collecting and analyzing data. The study was spatially delimited to three wards Kwa- Shoba, Ngwabi and Dingukwazi in the district of Simdlangentsha. The location of the study area is Northern Kwa – Zulu Natal that is 232 km from the University of Zululand. In order to facilitate the representativeness of all communities in the sample, the population was divided into homogenous groups, where each group, consisted of respondents with same characteristics.

3.7 CHARACTERISTICS OF SURVEY RESPONDENTS

Small-scale farmers are divided into three categories:

a) Sugarcane producers.
b) Vegetable producers.
c) Poultry farmers.

They keep livestock such as goats, indigenous turkey and cattle but not for sale; an only poultry is for sale. Young people are not involved in small-scale farming; only few individuals were help their parents.

3.8 PROBLEMS EXPERIENCED IN THE SURVEY

a) Observation, the sine qua non of science, is more difficult in the social sciences than in natural sciences. Observation in the social sciences is more subjective because it usually involves interpretation on the part of the observer. Motives, values and attitudes are not open to inspection.

b) In this study the researcher experienced problems of individuals who were not willing to publicly express their views in the focus group.

c) There had previously been research conducted in the area. The community expected things like funds to enable them to carry on with their projects from the researcher. What followed there was that they constantly asked the researcher question how and when the researcher was going to help them, adding that a different person had also undertaken a similar study but with no forthcoming result in the form of assisting them financially.

3.9 DATA ANALYSIS

Mark (1996:302) describes data analysis as "the process by which a large set of numbers is reduced to a smaller set of numbers to make it more understandable. The data collected

from instruments is the 'raw data'. To get an idea about trends in the data, about differences between groups and so on, the researcher reduced collection of data into smaller sets of numbers that would answer the research questions."

3.9.1 FREQUENCY DISTRIBUTION

Frequency distribution is used to describe a set of values on a single variable; it gives a "picture" of the distribution of values on a variable" (Mark 1996:305). The basic procedure in data processing is the grouping of the individuals studied in terms of their characteristics, in order to prepare tables: frequency distributions, which show the number of individuals in each of the categories by which a variable is measured.

After the data had been coded, the researcher constructed frequency distributions to examine the pattern of responses to each of the independent and dependent variables under investigation. Frequency distributions contain N as the number of responses and percentages (%) are given total a equal exactly 100 to present data in tabular form.

3.9.2 TABLES

According to Ary (1996:535) tables, figures, and charts are essential means for organizing and summarizing a whole set of data. Tables and figures may be profitably employed to present the data more clearly and more concisely than would be possible if the same information were presented in text form. Separate tables were prepared for each variable, showing how many individuals fall into each category or at each value of the variable. Whatever technique is used, the investigator should start with a clear conception of the tables required.

The researcher decided what set of variables would be covered by the table, what categories would be used, how the table would be arranged and which individuals would be included or

excluded. A well – constructed table can give the reader a concise overview of the data. A recommended technique for the presentation and statistical analysis of data is to organize the discussion around the hypothesis that is to restate first hypothesis and present findings concerning it. Repeating this procedure for each hypothesis in turn was made to avoid problems. All tables were clearly labeled. Tables produced are summaries and elaboration of the crude data. The numbering of tables makes it easy to record the source whenever data is used.

3.10 SUMMARY

This chapter has specifically outlined the manner in which the study was undertaken. It has precisely and concisely described the instruments employed in achieving the researcher's objectives. Research is based on the assumption that all behavior and events are orderly and has discoverable facts. Formal intensive and systematic application research methods are a prerequisite to discovering the facts about small-scale farmers.

CHAPTER 4
DATA ANALYSIS

4.1 INTRODUCTION

Mark (1996:393) defines data analysis "as the process by which a large set of numbers is reduced to a smaller set of numbers to make it more understandable. The data collected from respondents are "raw" data. They are usually a set of many numbers that are not too useful in their raw form. To get an idea about trends in the data, about differences between groups, and so on, data must be reduced into a set of smaller numbers that would attempt to answer research questions." There are varieties of how data is analyzed and presented.

The central purpose of data analysis in qualitative studies is to sift, sort and organize the masses of information acquired during collection in such a way that it addresses the original research problem. The interview was divided into three categories:

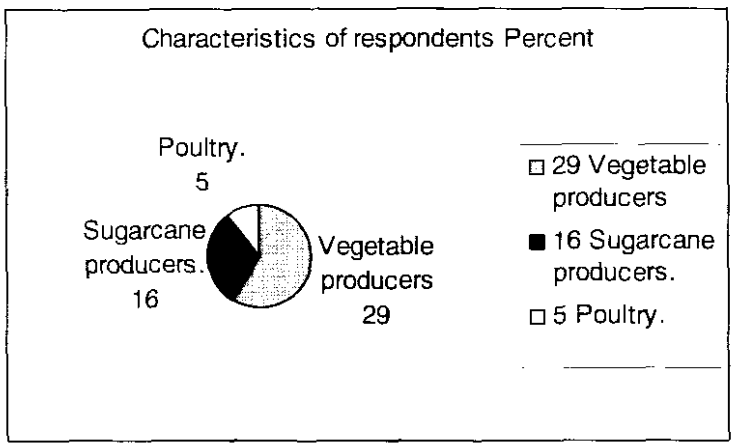
a) Management of production and resources;
b) Distribution of produced agricultural commodities and
c) Problems experienced in management and distribution of agricultural commodities.

4.2.1 CHARACTERISTICS OF THE RESPONDENTS

The number of the respondents that were surveyed is fifty and is portrayed in figure one.

a) Twenty-nine were vegetable producers.
b) Sixteen were sugarcane producers.
c) Five were farmers from a poultry project.

Figure 4.1 Characteristics of respondents.



The respondents have been categorized according to their activities. The sample consisted of fifty respondents. Out of these 16 were sugarcane farmers; Twenty nine were vegetable growers and five members keep commercial chickens. The majority of the respondents are involved in garden projects. The reason for this is that vegetables can be used for both household consumption and for income generation. Secondly a garden project costs less compared to a poultry project because commercial chickens require chicken runs, medication and feed. Thirdly, respondents mentioned that they are involved in garden projects because it is expensive to buy 1hectare each for sugar cane plot, but a farmer could grow vegetables around his/her homestead. Sugarcane requires a number of inputs such as fertilizers and pesticides.

Keeping poultry is popular among people from rural areas, Ten percent of the respondents keep commercial chickens. Few respondents are involved in the project. The reason for this is because chickens require expensive and appropriate feed, chicken runs. Chickens are also sensitive to climate changes and diseases. They die if it is very hot or very cold. There are two commercial chicken projects existing in the surveyed area. The advantage of a poultry project is the guaranteed cash turnover; if the chicks survive it takes three months after the purchase of one

day-old chicks to be ready for market. Commercial chickens' respondents mentioned that they buy one-day-old chicks in Swaziland and sawdust from Piet Retief.

These are reasons that make the project to be less desirable. Maree & Casey (1993:274) agree with the respondents that "in South Africa the poultry industry has become highly specialized and sophisticated making use of advanced technology in all aspects of production processes. As a result this has become one of the most technologically advanced industries in the agricultural sector." Many of the innovations and advances introduced into the poultry industry that have promoted such progress are, however, inappropriate in rural areas where so many essential features of an advanced technology are missing.

4.2.2 GENDER

The survey revealed that Twelve percent of the women participate in sugarcane projects. This is a result of the underemployment of women; the majority of rural women are not employed. It is expensive to buy land for sugarcane growing. In order for a farmer to have access to sugarcane fields he/she must pay deposit of R4000 to the Landbank.

Table 4.1 women involved in projects.

Project.	**Number of women.**	**Percentage.**
Poultry.	5	10 %
Vegetable growers.	20	40 %
Sugarcane.	6	12 %
Total.	**31**	**62 %**

The general underemployment of rural communities at Phongolo and the nature of womens' income generating activities mean

that women have very limited incomes to buy land for sugarcane production. The second reason is that sugarcane-growing expenses are very high compared to those of vegetables and other crops. Fifty percent of women are involved in community gardens and poultry projects. The reason for this is that women are readily available at home and these projects are easily manageable.

This is an important constraint as its access is linked to capital this determines the success of the business. Access to loans appears to be very limited. According to the White Paper for Social Welfare, (1995:18) most financial institutions whether in the private or public sector serve only a part of the agricultural sector. Many small-scale farmers and part-time farmers therefore, did not previously have access to services. According to the survey the majority of women own plots in community gardens and around homesteads. The reason is that according to the traditional land tenure system prevailing at Phongolo, arable and residential plots are allocated by the tribal authorities to male heads of households.

4.3 ACCESS TO LAND

64 percent of the respondents have access to land to grow vegetables and keep livestock because it is not expensive to acquire a piece of land in rural communities. They acquired the land from the Inkosi and the majority inherited the land from their forefathers. Thirty two have access to land for growing sugarcane. Thirty two % percent is involved in sugarcane because sugarcane fields are sold at higher prices compared to garden plots.

Table 4.2 Indicates number of respondents who have access to land

Condition	Respondents	Percentage
Hire the land.	2	4 %
Respondents who own the land.	32	64 %
Own the land buys it through Land bank.	16	32 %
Total	**50**	**100 %**

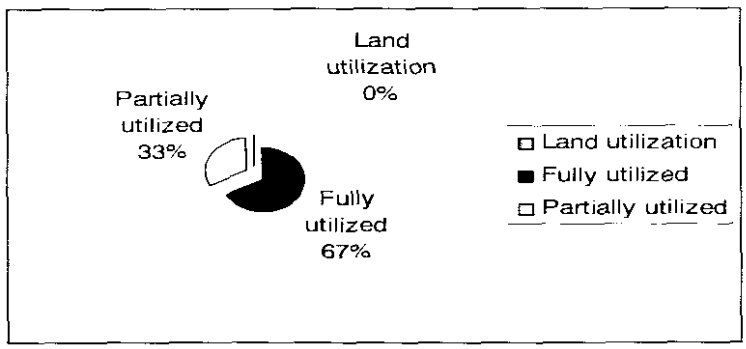
The majority of people who have enough land are sugarcane farmers because they get financial assistance from Landbank to buy land and then they are able to buy enough land. Four percent of the respondents who hire land are those people who migrated from other areas. The garden plot varies from a small garden plot (60 m x 40m) to the size of a sports field for vegetable growers, while for sugarcane growers this ranges from eighty ha to twenty ha.

The agricultural Policy, (1998:14) confirms that only three percent of South Africa is considered as high-potential agricultural land. For this and other reasons farmers utilize land which is not enough. About twenty six of African rural households currently have access to some plot of land for crop cultivation, while some twenty four percent of African rural households own livestock. Ownership of agricultural and other productive equipment is limited to eighteen percent.

4.4 UTILIZATION OF LAND.

Thirty three percent of the respondents partially utilize the land; the reason is that they do not have implements for tilling the land and fencing it to protect crops from being destroyed by livestock

Figure 4.2 Utilization of land.



The respondents mentioned that they do not cultivate the land that is away from homestead because it is not fenced, and also it is impossible to till ten ha of land using a hand hoe; farmers must utilize tractor and other relevant implements. 67 percent of respondents fully utilize the land.

The majority of the people who fully utilize land are community garden owners. This is because their land ranges from small plots to one hectare that they can plough using hands. Sugarcane growers mentioned that they hire tractors.

4.5 MANAGEMENT OF LAND

According to the study one hundred percent of respondents do not receive any training about resource management, especially land degradation that is caused by overgrazing. The reason for this is that training for resource management is neglected in rural areas. Secondly people who are not aware about sustainable development own the land. There are community members who keep livestock using extensive systems where there are no camps for livestock. It is necessary for communities to divide the land into camps so that there would be no overgrazing. There are no means for resource management; communities cultivate land for more than ten years without fallow.

Potgieter (1998: 48) established that "sustainable development is a development that satisfies the present needs without risking the

possibility that future generations may not be able to satisfy their own needs." This principle implies that while resources should indeed be used for the benefit of the present generation, they must not be merely exploited and destroyed but rather their full potential must be developed.

4.6 MANAGEMENT OF PRODUCTION

4.6.1 FALLOW SYSTEM

Productivity of the land depends on the soil husbandry. The respondents mentioned that they do not practice fallow system because they have few hectares of land which must be utilized throughout the year. Vegetable growers mentioned that for those who own plots it is impossible to practice the fallow system because they do not have enough land. The plot they have is utilized it throughout the year, for growing vegetables in winter and maize in summer.

Table 4.2 Fallow System

Condition	Number	Percentage
Respondents who do not fallow the land because they do not have enough land. The fallow is practiced only if there is no fence.	45	90
Fallow	5	10
Total	**50**	**100**

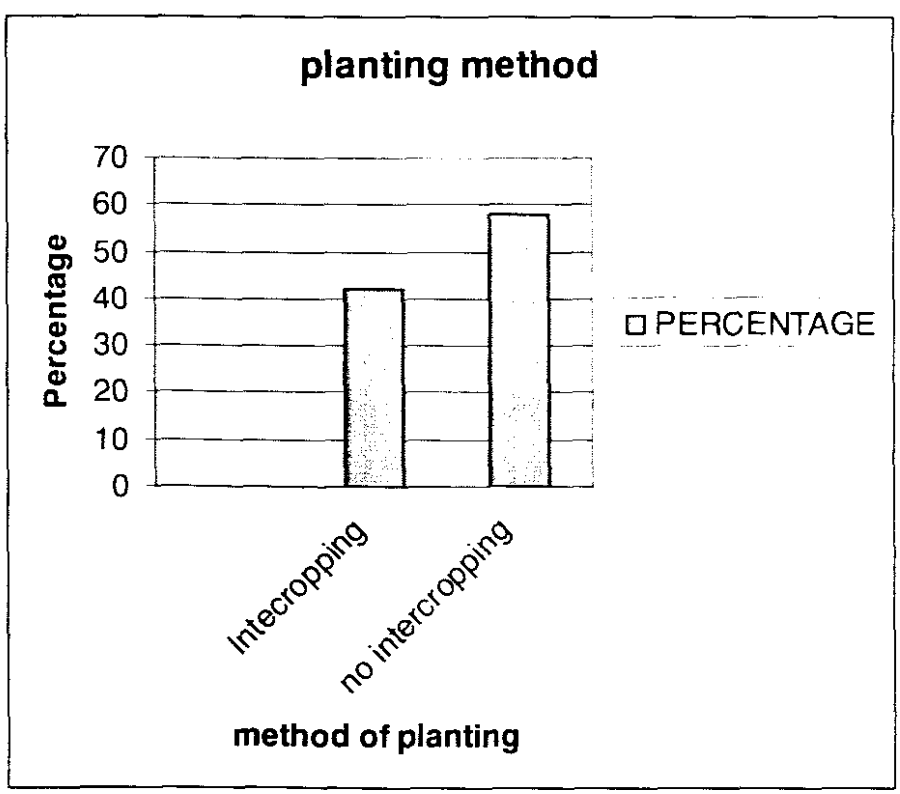
Respondents mentioned the land that is far from homestead is not fenced therefore they are forced to use one and the same plot continuously. The respondents also revealed that they noticed that land productivity sometimes is reduced but it depends on fertilizer application and the amount of rainfall per year. According to Kroll (1997:21) during fallowing system

moisture is conserved; the crops that will be planted after fallow could thus give high yield.

4.6.2 INTERCROPPING

Thirty percent of respondents grow sugarcane and do not practice intercropping. This is because the land is suitable for sugarcane only. Respondents also mentioned that intercropping causes problems during harvesting because different crops mature in different seasons. Ten percent are poultry farmers and these do not practice intercropping. Fifty eighty percent practice intercropping because intercropping serves as insurance if one crop fails. However, they grow uniform vegetables in the same area annually.

Table 4.3 Intercropping



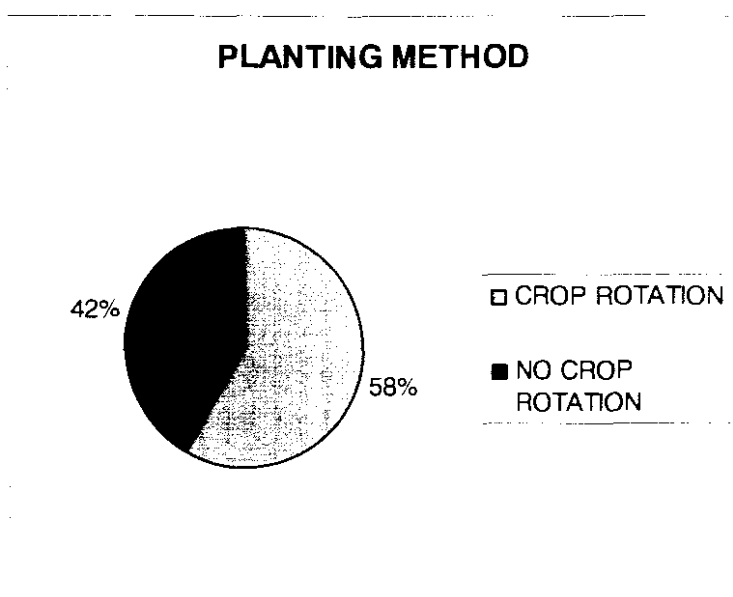
The researcher observed that vegetable growers grow cabbages, spinach, onions, tomato, and green pepper and alter with maize. Another characteristic of subsistence farming is the lack of

flexibility. The absence of rigid rules allows for considerable adaptability, as in the alteration of the usual crop succession plan in the event of unusually good or poor yields in any plot.

4.6.3 CROP ROTATION

Fifty percent of the respondents practice crop rotation because this controls diseases and respondents also mentioned that if sweet potatoes are grown in an area more for than two years diseases tend to develop. Respondents revealed that these crops are altered because vegetables grow well in winter since there is little amount of rainfall and maize is planted in summer. Vegetables are rotated with maize and pumpkins. Excessive rainfall perpetuates pests and diseases especially in cabbages and tomatoes.

Figure 4.3 indicates number of respondents practicing crop rotation

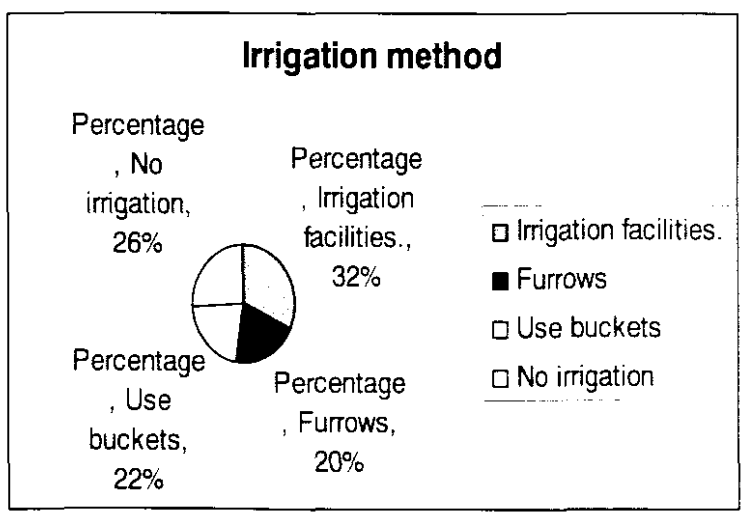


Sugarcane growers do not practise crop rotation since the land was bought specifically for sugarcane and there could be problems in harvesting sugarcane. According to Rechigil (1982:283) rotating crops breaks the link between host susceptibility and pathogen; it helps to prevent a buildup of

diseases. Continuous cropping of vegetables has frequently resulted in decreased yields because of root diseases.

These findings also revealed that the majority of respondents grows and rotates same crops and vegetables in one and the same field for more than three years. Monoculturing each crop gave the poorest yields and resulted in severe root diseases and these results in the poor quality of agricultural commodities. Rechigil (1982:27) agrees with that, i.e. that rotation is most effective for insects that are restricted in feeders that are sluggish or have a limited ability to migrate. Crop rotation is the best and sometimes the only means of managing certain insects.

4.6.4 Table showing irrigation methods used by small-scale farmers



Water is essential in farming for quite a number of various activities. Thirty two percent of respondents utilize improved irrigation schemes such as pumps and sprinklers. They also revealed that irrigation is the basic requirement for growing sugarcane. Thirty two percent of the respondents also revealed that sugarcane is an annual crop, which is grown throughout the year. Therefore natural rainfall must be supplemented by irrigation to create favorable moisture conditions so that moisture

is not a limiting factor to crop growth during any part of the growing season.

Twenty percent of the respondents have built dams inside their gardens and use pipes or canal irrigation. These dams store water during rainfall season. The reason is that they experience problem of drought in winter. Respondents complained about the dry season and this explains why they built dams twenty two percent rely on river water for irrigation. They collect this water using buckets and few individuals have pipes. Their argument for this use is that reason being irrigation facilities are expensive. Respondents emphasized that they cannot afford to buy sprinklers.

Sixteen percent of the respondents mentioned that they do not irrigate vegetables but only depend on rainfall because they lack irrigation facilities. The researcher observed that some of the rivers become dry in winter. 10 percent of them use water for livestock (for drinking purposes and cleaning chicken runs). At Phongolo the time consuming arduous nature for water collection indicates in the priority given to this basic need. There is dissatisfaction expressed in the Phongolo community gardens with the present water supply. This has become a major issue because of inadequate water supply and lack of irrigation system that could be used by these community gardens, which do not have a lot of money to pay for irrigation. Hence the water supply remains inadequate for their needs.

Kroll (1997:6) agrees with the findings "supplementary irrigation does not only increase yields per acre but also stabilizes the entire basis of farming. Quantity and quality of production depends on rainfall distribution or irrigation system. Unreliable methods of irrigation hinder the sequence of producing quality agricultural commodities. Farmers do not have a stable process of production." Where irrigation supplements rainfall, multicropping is easier than when there are two rainy seasons

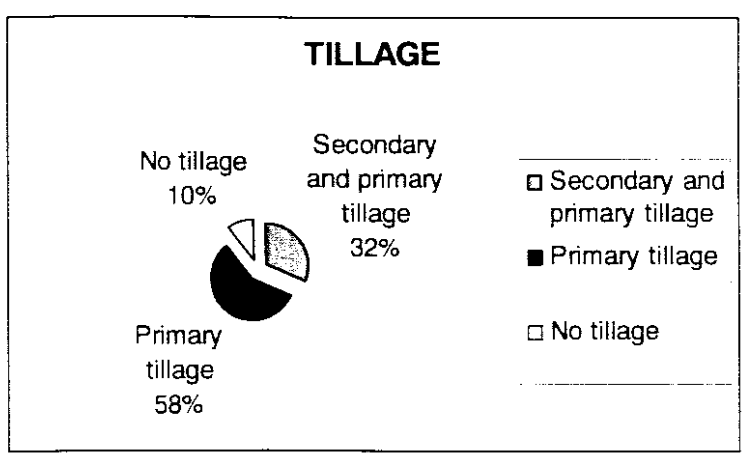
dictating the planting seasons. The problem of irrigation facilities is emphasized in chapter four of the Agricultural Policy (1998:27). The absence of potable water services reduces the quality of life and productive capacity of people. The provision of dependable water supplies could have a strong positive effect on food security and income generation for rural women.

Respondents further revealed that monthly rainfall varies throughout the season in a well-defined annual cycle. The wettest months are November, December and January. Vegetables cannot be planted during the wet season because they are susceptible to diseases and pests. In addition respondents mentioned that their intention is to grow maize and sell it to maize mill owner but they can not grow it in the dry season.

4.6.5 TILLAGE

Thirty four percent of respondents practice proper tillage that is primary tillage and secondary tillage. The reason for this is that tillage controls weeds and destroys pests. Secondly respondents who practice proper tillage have implements like ploughs and those who lack implements afford to hire implements.

Table 4.4 indicates type of tillage



Ten percent of the respondents do not till the soil because the system is not applicable to commercial livestock. Fifty six percent of respondents revealed that they do only primary tillage because the respondents lack implements. They plough soil for sowing seeds and it is expensive to hire tractor. The majority complained that they could not till one hectare of land using hand hoes. Respondents, especially sugarcane farmers mentioned that tillage is the basic requirement because it controls weed and reduces labor costs; therefore they are forced to till the soil.

The minimum or primary tillage is ineffective because the farmers experience weed problems, when the seed germinates it germinate with the weed seeds. Rechigil (1982) highlighted that tilling the soil has been the central part of crop husbandry. Tillage loosenes the soil so that crop seeds could be planted. Tillage destroys weeds in the field prior to planting and after seed germination.

4.6.6 METHODS OF FERTILIZING SOIL

Thirty six percent of the respondents apply both fertilizer and compost especially fertilizers that contain nitrogen, phosphorus and potassium because without fertilizer application the crop could yield a poor harvest. Four percent of the respondents utilize none, the reason is that fertilizer is expensive and they do not have livestock where farm manure can be collected.

Table 4.4 Indicates types of fertilizer used by farmers

Condition of enriching the soil	Number of respondents	Percentage.
Utilize both fertilizer and compost.	18	36 %
Utilize neither compost nor	2	4 %

fertilizer.		
Apply fertilizers only	12	24%
Poultry project where fertilizer is not a requirement	5	10%
Utilize only compost.	13	26 %
Total.	50	100 %

Twenty four percent of the respondents utilize fertilizer containing nitrogen, phosphorus and potassium because fertilizer is a basic requirement and some soils like sand soil are poor in nutrients content. Therefore nutrients should be supplemented with fertilizers. Ten percent of the respondents do not need fertilizer because they keep poultry. Twenty six percent of the respondents utilize only compost since fertilizer cannot be afforded. Sugarcane farmers explained that they are forced to buy the recommended fertilizer. As a result they do not apply any fertilizer that is not recommended.

Sugarcane farmers said that they apply fertilizer twice a year during the planting season and later after the crop have emerged. Vegetable growers apply fertilizer and compost once during planting. According to Kroll (1997:21) organically grown crops are generally considered to be nutritionally beneficial and, could be sold for a higher price than those grown using chemical fertilizers. In addition Rechigil (1982: 283) highlighted that nutrients and organic fertilizer are returned to the soil primarily with farm manure and the fertilizer application. With the availability of organic fertilizers in agriculture yield is maximized.

4.6.7 HYBRID SEEDS

The findings revealed that Thirty two percent of the respondents utilize hybrid seeds for sugarcane. The reason for this is that hybrid seeds are disease-resistant and they give high yields even if there is drought. Sugarcane growers explained that after in harvesting the following year when farmers till the soil, cover

ratoons (sugarcane stalks left in the field as seed for the next season.), have fertilizer applied and irrigated to them. The ratoons then grow to the stature of a sugarcane stalk.

Table 4.4 Indicate farmers using hybrid seeds

Seed type	Number of the respondents	Percentage
Sugarcane hybrid seeds	16	32 %
Buy vegetable hybrid seed.	24	48 %
Commercial chickens.	5	10 %
Indigenous seeds.	5	10 %
Total	50	100 %

In addition respondents mentioned that they do not buy seed annually but they utilize the previous year's seed. Forty eight percent of the respondents said that they are vegetable growers. They buy seedlings in Junk hardware and in summer they buy maize seed in Junk hardware or use indigenous maize seeds. The respondents revealed that the seed prepared in their gardens is destroyed by pests (umswenya) and diseases in the soil and it is not, therefore, productive.

Ten percent of the respondents use indigenous maize seeds because the hybrid seeds are very expensive, but the respondents are of the view that the indigenous seed does not produce enough harvest and during preservation, insects (ibhu) eat maize. There is a need for capacity building in the community because farmers can prepare their own seedbeds and preserve seeds on their own. Ten percent of the respondents buy commercial chickens in Swaziland because community is interested in commercial chickens. Meat for indigenous chickens is not palatable. Ngidi (1997: 20) agrees with the investigation

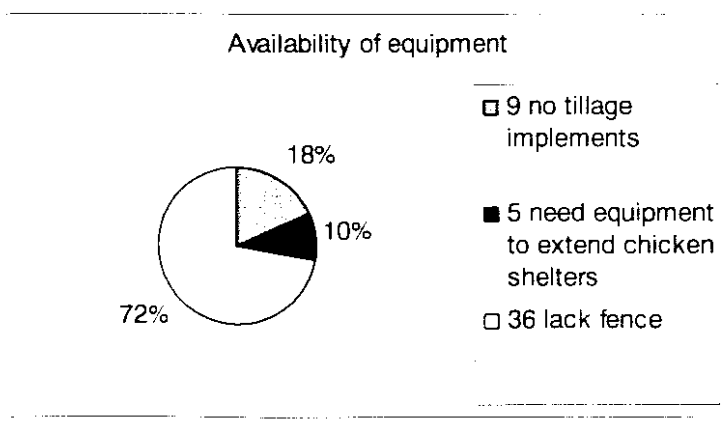
"the area grown with improved maize varieties and hybrids in developing countries runs into millions of hectares."

Major efforts to develop high-yielding technologies for many other crops grown in under-developing country conditions have begun more recently. It is too soon to estimate the impact on global production. Results from farm trials of improved varieties and cultural practices for various food crops show great potential for yield increases.

4.6.8 AVAILABILITY OF EQUIPMENT

According to the study seventy two percent of the respondents lack access to implements such as disc harrow and ploughs for tilling the soil the soil as primary and secondary tillage.

Figure 4.5 shows the availability of the equipment.



Thirty two percent of them mentioned that they hire tractors, implements and trucks to transport sugarcane from loading zone to the Phongolo Illovo sugar mill. There are respondents who use oxen and carts to carry maize from fields after harvesting as well. Respondents assume that since chickens are marketable they will use profit to buy refrigerators. Ten percent of the respondents said that they need building material to extend shelter for chickens. The profit from selling chickens is used to buy feed and vaccines. Eighteen percent of the respondents, however,

lack equipment such as fence to protect crops from destruction. In the absence of a proper fence shrubs and thorn trees are used but what they need is wire to build fences.

4.6.9 STORAGE FACILITIES

Study reveals that fifty eight percent of respondents have no access to storage facilities because of lacking knowledge concerning vegetable preservation.

Table 4.5 Indicates availability of storage facilities

Implements	Respondents	Percentage
Store sugarcane at sugarmill, they have access to storage facility	16	32 %
Lack storage facility for slaughtered chickens	5	10 %
Lack storage facility for vegetables they store dry maize only.	29	58 %
Total	**50**	**100 %**

Portion of the harvest is usually left on the field destroyed by rain in summer. Thirty two percent have access to storage facilities because their sugarcane is stored at Illovo sugarmill after harvesting. Members of poultry project explained that they need refrigerators so that they can slaughter chickens. They assume that it will be easy and profitable to sell slaughtered chickens.

Respondents keep dried maize that is harvested in winter in traditional equipment (Inqolobane) and tanks because there are no other ways for maize storage. Few respondents afford buying tanks because tanks are expensive and tanks should have tablets that will destroy insects. Respondents highlighted that the dried maize is spoiled and eaten by mice and insects (ibhu). In

addition those who utilize tanks they use insecticides bought at pharmacy to protect it from insects (Ingobolwane). Wilsenach (2000:4) confirms the findings "agricultural products are perishable products, farmers experience problem of loss annually."

4.6.10 PROVISION OF SKILL

According to the survey fifty eight percent of the respondents are provided with skills for vegetable production. The reason is that they are members of community gardens and the extension workers are readily available. Thirty two percent are provided with skills in sugarcane husbandry because they are supposed to sell good quality crops and ten percent receive skills regarding livestock husbandry. Respondents who receive training are those who are members of such potential projects. People who are not involved in projects are neglected because it is difficult for extension workers to identify individual problems in the area.

FIGURE 4.5 TYPE OF SKILL

Code

1. Spacing, fertilizer application, pest and weed control, growing and harvesting period of vegetables. Treatment of disease especially Sugarcane husbandry, soil test, disease control, soil test, fertilizer application, business management and international trading.
2. Livestock husbandry.

The low level of people with skills in rural community perpetuates the lack of capability to increase their income. Potgieter (1998: 217) states that the "provision of skills enables systems to maximize their own choices, to enhance their personal well being and to improve their quality of life. Skills open doors and enable people to help themselves." People require a repertoire of life skills and that these skills are appropriate both for their

developmental tasks and for any special problems. Extension officers from the department of agriculture provide the skills and information. Concerning the provision of skills regarding the management of production and distribution of agricultural

4.7 ACCESS TO CAPITAL

The general underemployment of rural people at Phongolo and nature of farms' income generating activities indicated that they have very limited income to offer any training in these skills. Sugarcane farmers said that little profit from the Phongolo sugar mill is used for buying fertilizers, paying the laborers, irrigation levies, electricity along in the irrigation levies. They also need more funds for transport, to buy pesticides and herbicides.

Thirty two percent received financial assistance from Landbank to buy land and grow sugarcane and this financial assistance is available for the members of the sugarcane associations only. Sugarcane farmers therefore have a stable market and profit and this enables them to repay the loan.

Table 4.6 indicates access to financial assistance

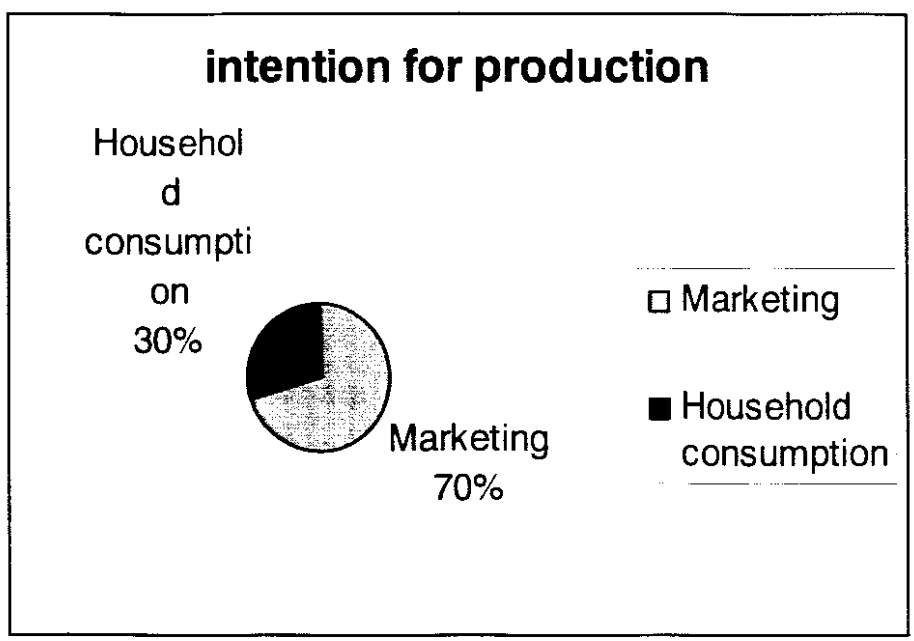
Assistance and institution	**Responden ts**	**Percentage**
Loan from Landbank to buy land	16	32 %
R50 000 from the Department of Agriculture	5	10 %
Received nothing.	19	38 %
Receive assistance of dam and fence.	5	10%
Department built dam and donated fence and R8000.	5	10 %
TOTAL	**50**	**100 %**

Ten percent of the respondents received fifty thousand rands from Department of Agriculture to build shelters for chickens. They explained that in order to get financial assistance applicants were required to submit proposals and it should be written in English. However, the submission of proposals done is not a guarantee that project members will receive funds.

The rural people have limited access to funds and it is difficult to apply for bank loans because applicants do not meet bank requirements. Thirty eight percent of the respondents did not receive anything and yet there are many gardens that need to be ploughed. It becomes difficult for projects to run with funding and this makes it difficult for the government to provide such projects. Only ten percent of the respondents received fence and another also ten percent received eight thousand. This only indicates that small-scale farmer; especially vegetable producers have limited access to funds.

4.8 FARMERS INTENTION TO GROW CROPS

Table 4.7 shows farmers intended to grow crops.



Income generated from community projects help unemployed people to support their families. Thirty percent of the respondents produce for consumption because of food insecurity in the area.

Vegetable growers explained that due to underemployment the majority grows crops for household consumption and then sell the surplus.

4.9 DISTRIBUTION OF AGRICULTURAL COMMODITIES

Sixty four percent of the respondents showed that they lack specific market. Respondents sell their agricultural commodities in the community, at agricultural show, and at pay points.

They rely on government trucks to transport them to these agricultural shows. It is because respondents grow uniform crops and vegetables e.g. fifteen members of garden project grow cabbages and spinach at the same time. It is indicated that there will be no market for such products because all members of the community grow similar crops. In addition some of the respondents produce poor quality crops because they do not have money to buy fertilizers and pesticides.

It is suggested that farmers must produce various crops so that they could be able to sell to each other. The producing capacity building should be a prerequisite where farmers would be trained to grow various crops including cash crops. Customer profile is important for most of the time in rural areas. Here, security food is comprised of beans and maize, therefore, farmers could grow not face problems of demand for this staple food from the community. It is important to know which activity is performed and in which season. Communities experience food problems in winter because there are no wild greens (imifino), which would provide a market of vegetables in that season. Vegetables should be planted in such a way that they can be harvested when communities experience problems like hunger.

Advertising a product is also important. Farmers are unable to advertise their commodities because they are far from the road. It was learnt that they sometimes hire transport and sell the

commodities at the town market twice a season. Forty two percent of the respondents have transport, one respondent sells commodities at Paulpietersburg and according to researchers observation he is not a small-scale farmer but is an emerging farmer. The respondent has access to town markets.

Ewang (2000: 37) highlighted that rural people are often isolated from major markets. They have limited access to markets. The majority of them are located more than 20km from the nearest markets. Those who are often close to the markets are unable to reach them easily because roads and transport are inadequate.

Respondents mentioned that they experience problems of competitors, who are commercial farmers; because they produce good quality commodities and they have access to markets in town, to retailers, wholesalers and institutions. The researcher observed that farmers grow the same crops at the same time and that is why they compete for the market. Ten percent of the respondents revealed that they sell live chickens to communities at the price of twenty five each.

The respondents explained the need refrigerators so that they could slaughter chickens and sell them for a lesser price in bulk and make good profit and turnover. In addition Naidoo (2001:37) in the literature review argued that there must be a demand for the product. Some applied research should be conducted to make sure that there is available clientele to be served now and in the foreseeable future. It may be necessary to make product adjustments to assure satisfactory market performance. Farmers must be able to reap some benefits from the increased output, and be able to sell their products profitably to someone else.

4.10 TRANSPORT

As people specialized in different activities, farmers began to produce more than was needed for home consumption. Markets

then were developed to facilitate the exchange of this marketable surplus with other people. One of the limiting factors in economic development is the lack of adequate transportation such as cars and trucks. This is due to the lack of financial resources for buying transport. It is impossible to buy bakkie from the profit generated from the community gardens.

Table 4.6 SHOWING AVAILABITY OF TRANSPOST

Transport	**Number of respondents**	**Percentage**
Hire Illovo trucks.	16	32 %
Respondents who have transport.	4	8 %
Use government trucks	**30**	**60 %**

Thirty two percent of the respondents uses transport sugarcane using Illovo trucks to transport sugarcane from the loading zone to the sugar mill because the farmers lack transport but can afford to hire trucks.

Only four percent of the respondents have their own transport and sixty percent of them depend on government trucks to transport them to the agricultural show. This is owing to the fact that the income generated from community gardens is not sufficient to buy a bakkie or a truck. Machado (2001: 13) points out that the function of transport is chiefly one of making the product available where it is needed, without unreasonable additions to the overall cost of the produce.

4.11 INCOME GENERATING BY ACTIVITIES

The table shows that the income or profit distribution is not equal. Thirty two percent of respondents generate income, which ranges between thirty thousands and Ninety thousands per

annum depending on the size of the land. Normally farmers have enough hectares of land to cultivate cash crops like sugarcane.

Table 4.7 indicates Income generated from products

Product	Income	Percentage
Sugarcane.	R30000-90000.	32 %
Vegetables sold in the town market.	R3000.	4 %
Poultry.	R4500.	10%
Vegetables sold in community.	R500 or less.	54 %

Secondly the respondents have a stable market at the Illovo sugarmill. During the interview they mentioned that demand always exceeds supply. Four percent generate an income of three thousand annually. Respondents who have access to town markets and who have transport to sell their commodities to other communities. One respondent mentioned that he transports and sell his tomatoes using his bakkie to Paulpietersburg.

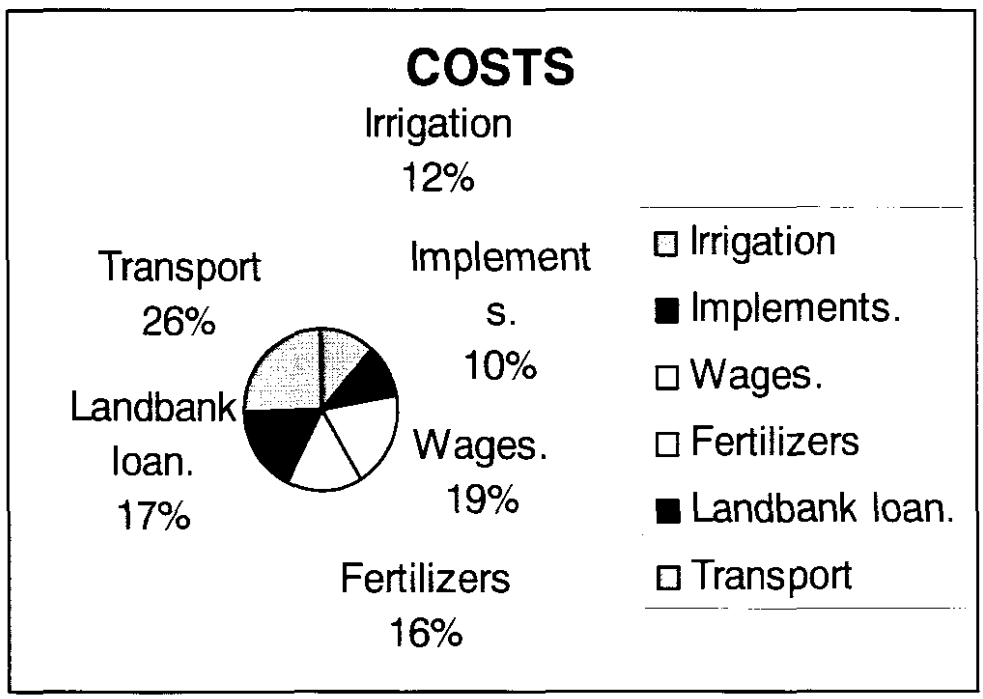
Fifty four percent of the farmers generate income of about five hundred per season, less or nothing. The reason is that they lack access to markets because they grow the same vegetables in the community and sometimes their produce is of poor quality. Ten percent of the respondents generate income of over five thousand from poultry projects, but this is generated after three months when chickens are ready for market.

4.12 PROBLEMS DISEMPOWERING SMALL-SCALE FARMERS

The early pioneers of agriculture did not have to concern themselves with marketing. Each family grew its own food and fiber and built its own shelter but now the increased marketing

efficiency is the goal (Van Veldhuizen, Waters- Bayer, Ramirez, Johnson, and Thompson1997: 103).

Table 4.17 Capital spent on each farm input for sugarcane



This argument is confirmed by a high percentage of farmers whose intention is to generate income by growing and marketing agricultural commodities. The major problem is lack of markets. There must be interrelationship between the increasing productivity of the agricultural commodity process and the development of an adequate marketing system. Inputs are expensive and small-scale farmers lack access to capital acquisition or borrowing from lending financial institutions.

The rural people are also likely to have the least access to land under cultivation, where the majority own small plots. Some mentioned that they have the least access to fertile land and water. Some areas that contain very high concentrations of poor people are often those which have the least potential for agriculture and therefore the least potential for profitable crops.

The other limiting factor is transport. Farmers do not have transport to convey commodities to the markets. The road infrastructure is underdeveloped which means that farmers lack access to good transport. The vegetable producers mentioned that they rely on government trucks to take them to agricultural shows.

Farmers also are not competent in the market because the majority of them produce poor quality crops. The supply always exceeds demand because their produce is not market-driven. These small-scale farmers they determine what to produce. They all grow the same vegetables within same season.

Some of the problems they raised include the following:

- Lack of access to capital and financial institutions. Respondents highlighted that sometimes the profit become less than the expenses. Respondents emphasized the point of expensive inputs. Expenses that are important are the following:

- Pesticides.
- Fence.
- Water levies to irrigation boards.
- Electricity to Eskom.
- Landbank installment for land purchased.
- SASA levies.
- Tax.
- Harvesting and haulage fees.
- Labor wages.
- Fertilizer and seed.
- Transport.
- Sawdust.
- Irrigation.
- Medication for chickens.

- Droughts and weather in general are a major also problem

4.13 CONCLUSION

This chapter presented data analysis and interpretation of data using graphs tables, charts and histograms. (Mark 1996: 318) describe graphs as particularly useful for describing relationships between variables. Large set of data is reduced to a smaller set of data to make sense out of the data that we have collected.

CHAPTER 5
RECOMMENDATIONS AND CONCLUSION

INTRODUCTION

This section seeks to evaluate the main findings of the dissertation. This study was undertaken with the aim of examining the nature of

a) The management of natural resources,
b) The management of production and
c) The distribution of agricultural commodities.

5.2 DISCUSSION OF THE FINDINGS

The study was based on the following objectives:
To identify aspects and methods the community adopts to manage the natural resources, production and distribute agricultural commodities. The research also investigated about activities and processes, which are involved in the management of production and marketing of commodities;

a) To identify problems experienced in managing production, and the produce of agricultural commodities and
b) To identify strategies farmers use, for distributing agricultural commodities. This is in view of the situation that farming activities at Phongolo reflect a state of transition from pure subsistence to commercial farming. The farming methods used are a combination of traditional and modern methods. The adoption of technology rate is very low, and this tends to make small-scale farmers produce agricultural commodities for consumption. The little surplus that they may have left from their produce is the one that is sold.

Objective 1

To identify aspects and methods the community adopts to manage natural resources and production of agricultural commodities. The researcher investigated the activities and processes that are involved in management of production and marketing of commodities.

It was discovered that the management of natural resources was not a known phenomenon at Phongolo. The community is not familiar with management of resources.

According to Dumont (1966:56) serious concerns relating to environmental degradation remain. Recognizing that stocking rate is an economic variable does not remove the anxiety that existing stocking rates can cause degradation of the grazing resource. Land is poorly managed, without control for overgrazing. Poor management of resources refers to the continuos removal of soil from the fields where it is useful to where it is of little or no use at all. Grazing land should be divided into camps.

Next to Phongolo River where there is sugarcane fields the rate of soil erosion in these areas is consequently low because the ground is generally covered either by natural vegetation or sugarcane fields. In some areas the slopes are so steep that each time heavy rains occur fertile soil is washed away. Soil erosion is a common feature in those areas.

The research investigation identified that vegetables are widely grown among small-scale farmers at Phongolo.

Sugar–cane is grown under the technical and financial support of Phongolo sugarmill. The methods used are similar to those of commercial farmers. The problems experienced by vegetable growers do not have a negative impact on sugar-cane production.

Objective 2

One of the major problems experienced is in the managing of production and produced agricultural commodities.

The research investigation identified that the problems experienced by vegetable growers are not the same with those that are experienced by sugarcane growers. Vegetable growers do not apply appropriate methods because of lack of finance. The Agricultural Policy, (1998: 9) states that a particular interest of the government is in supporting the development of financial service co-operatives sometimes referred to as Village banks like the Landbank. It was shown in chapter 4 that there is people who utilize fertilizer, other form of compost and some do not apply fertilizer at all. According to the Fertilizer Manual, (1998: 63) fertilizer is the basic requirement to enrich soil.

Capital is one of the most important variables for the success of the business undertaking; for successful management to take place substantial capital is therefore essential. Many people cultivate their fields using hand hoes because they cannot afford to pay for tractors. The lack of capital results in farmers not applying the recommended fertilizers, irrigation and tillage of the soil properly. The lack of this consequently produces low quality crops. Small-scale farmers need financial support if their food security is to be improved otherwise production will remain at a subsistence level and their standard of living will always be low.

According to Reener, Marais & Nel (1995:96) "the climate is a phenomenon that indicates the weather condition of an area as studied over a long period of time. The Phongolo climate is characterized by great differences between summer and winter. This consists of hot summers with midday temperatures ranging from twenty six degree celsius to forty two degree celsius. "

The rain falls in summer. The type of rainfall is generally frontal that occurs as drizzles. Good rains begin in September and spread out to March of the following year.

The production of vegetables is seasonal and is enough for one season only. The rural people have the least access to fertile land, irrigation facilities and financial resources. Wards like Manyandeni, Mkhwakhweni, Phondwane contain very high concentrations of small-scale farms, which have the least potential for agriculture, the least potential for profitable cash crops and are the most prone to drought.

The relationship between land and agriculture is clear that without access to land farmers cannot produce anything. It is clear from the study that the community neglects agricultural practices because of the unavailability of land and insufficient financial assistance. Proper management of production would maximize yield.

Chapter four has indicated that rural communities also experience the problem of the application of fertilizers. Respondents clearly stated that fertilizers are expensive. In addition the soil analysis of soil prior to planting would give a clear picture of the fertility of a given soil by indicating the specific nutrients present in the soil. Green manure is recommended for rural communities or small-scale farmers, as this improves the soil by sowing it with leguminous crops such as beans. When these plants have matured, they are generally buried by hoeing or digging by utilizing green manure. The soil fertility could then be appreciably increased.

According to the study rural communities have limited amounts of livestock. This is shown by the small percentage of respondents who are engaged in poultry farming. The communities do not keep livestock for sale. The majority is interested in growing vegetables and sugarcane. Ewang (2000:37) agrees, "that cattle

provide an income from meat and milk products and oxen can be used for ploughing."

The lack of farming knowledge and poor managerial ability is the principal causes of low adoption rates of sound livestock production practices.

Objective no 3

To identify strategies used, for the distributing of agricultural commodities. The farm market is usually associated with unstable market, perishable agricultural commodities and of relatively low farm prices. A related set of farmers' problem could be termed "the farm marketing problem." At Phongolo there are several dimensions of this problem. Firstly, farmers find it difficult to adjust precisely because of their production schedule to meet the changing market conditions.

Agricultural commodities come from many small units operated independently. The farmer may wish to change his/her agricultural commodities and then do so by planting more. The problem is that rural communities grow the same vegetables without feasibility study. Their produce, however, is not market-driven. It therefore fails to meet the level of generating the required profit for the farmer.

Feasibility studies are important step because it is impossible to start a business of selling pigs whereas in the area where the religion is against the consumption of pork. It is obvious that there will be no markets. It is clear that rural communities lack knowledge about business management.

The final agricultural commodities yield is considerably beyond farmers' control; the unpredictable weather, disease, and other non-controllable factors affect yields. The inability to adjust

quickly to changing conditions creates a high-risk element in agriculture.

5.3 RECOMMENDATIONS

In the light of the findings of the study the following recommendations are made:

5.3.1 Provision of skills

The provision of skills enables systems to maximize their own choices. It also enhances their personal well-being and improves their quality of life. Skills open doors and enable people to help themselves. People require a repertoire of skills and that these skills should be appropriate both to their developmental tasks and to any special problem.

The government need not provide funds to communities without skills. The notion skills transfer is important; skills for business management record keeping, marketing as well as resource management are all essential. Community change could come only through the work of ordinary people. The lack of information about marketing makes them to be less competent in the market.

5.3.2 Management of land for sustainable development

It has been shown in chapter 4 that there is no training about resource management. The land is poorly managed, besides being overgrazed. The erosion of fertile soil is a common feature at Phongolo and this is because of the reason being poor soil management. It is recommended, therefore, that extension workers teach small-scale farmers about land management. Land selected for cultivation would preferably be flat or slightly slopping, with a maximum slope of one or two percent to avoid cultivation on a terrace which is always more expensive and difficult to manage.

The optimum site for a vegetable garden is one that is close to a watercourse or a well, since it is essential to be able to irrigate the crops. The general rule is that all soils be cultivated to exhaustion. This maybe suitable, provided that they could be cultivated to a reasonable depth and brought to a reasonable fertile state.

The rural communities are also likely to have the least land under cultivation, the majority own small plots. The government must make plans for rural communities to have access to land so that they can participate in production of cash crops. It is revealed in chapter four that only thirty two percent have access in sugarcane production. Small-scale farmers should be empowered to grow cash crops, such as tobacco, sugarcane and sunflower. Growing cash crops can be beneficial to small-scale farmers because they can use sunflower to feed their chicken. If all producers grow same vegetables it is obvious there will be no market, based on researcher's investigation rural communities have the least access to markets because they produce same agricultural commodities.

5.3.3 Management and production

Farmers must be adapted to the changing environment and adopt new technology, techniques as well as new varieties. Agricultural officers should give training to groups of farmers in the areas and also visit individual home gardens.

In the case of technical information such as fertilizer application or improving irrigation techniques, agricultural officers could also explain and demonstrate what this entails. During these visits, there is normally an intensive exchange of information between farmers. Usually there are programs where specialists from institutions and research stations in other areas, which conduct training courses in production management.

In view of the limited human and financial resources available, people could use the available resources for the building up of their projects and collect old wheels for building houses for chickens. Capacity building is important, in view of the fact that fertilizers are expensive as revealed in chapter 4, that some small-scale farmers do not apply fertilizers even though fertilizer is a basic need. Small-scale farmers could thus be educated to utilize the resources they have. For example communities of Port Nolloth collect kelp that washes up naturally from the sea. This is then left to dry; milled and crushed it is then used as fertilizer. Communities could collect farmyard manure in livestock rearing areas. It should be stored in well-compressed heaps to promote fermentation. Vegetable matter could be added because after decomposition it forms humus. Soils used in vegetable production need to be relatively fertile. Organically grown crops are generally considered to be nutritionally beneficial and these could be sold for a higher price than those grown using chemical fertilizers.

Communities could also utilize green manure. Soil which has produced crops other than vegetables or which has been left fallow could be improved by sowing leguminous crops such as beans. When these plants have matured, they are generally buried by hoeing or digging by utilizing green manure. In this way soil fertility could be appreciably increased.

There is no need for small-scale farmers to buy expensive fertilizers. The raw material for compost could be obtained from any type of plant, provided that it is neither too old nor too woody. Sources of material include grass or hedge clippings, crop residues, wood ash, kitchen refuse and almost any other organic matter.

5.3.4 Pests and diseases control

Crop rotation is an essential part of any rotation program. This is in planning in advance of the crops that are to be grown and the area of the land to be allocated to each crop. The farmer should, therefore, divide vegetable gardens into separate sections or plots, corresponding to the number of groups of plants to be grown.

The main objective of crop rotation is to grow a succession of different crops on one piece of land. If one crop is grown repeatedly on the same site, as in monoculture, there is the risk of a considerable loss in yield. If crop rotation is carried out correctly, satisfactory yields may be obtained from all the crops grown.

The main consequences of monoculture include the depletion of specific fertilizer reserves in the soil, possible accumulation of toxic minerals, development of diseases, and pests and weed invasion. A loss of soil structure is also possible. All of these could lead to reduced productivity.
Fallow breaks in the cropping cycle should be an integral part of a crop rotation system since this provides the soil with an opportunity to recover from intensive cropping. The fallow system may be of long or short duration, depending on the area of arable land available and that in turn is dependent on the intensity of cropping.

Irrigation is problematic for small-scale farmers because as it has been shown in chapter two Phongolo is an area with relatively regular rainfall, but with dry periods. Irrigation extends periods of production, therefore, communities could be taught and motivated to use furrow or channel irrigation.

The most effective technique is to create a reservoir or dam upstream for storing water in the rainy season. Underground

pipes may be used to convey the water from a reservoir to the site. Irrigation facilities are expensive; alternatively streams, rivers, canals or wells could be used as direct sources of water supply. This fairly basic system allows for the irrigation system to be adequately controlled and this is normally used by small-scale growers who cannot afford more expensive systems.

The government could also make financial assistance available to small-scale farmers, or to capital intensive projects designed to bring new land into production. This would be in order to harness natural resources more efficiently for example river basin development. Other productions could be aimed at increasing the production of export crops. Small-scale farmers could also be provided with services, input access to credit and marketing facilities.

5.3.5 Distribution of agricultural commodities

The choice of channel must depend on the needs and wants of customers. It is important that the small-scale farmer targets specific market before producing agricultural commodities. Knowledge of customer profile could help in finding out what communities needs are. In terms of the target market community preferences are important. The other problem is that the majority of small-scale farmers stay far from town and the main road. The market must be located next to the road or any location that facilitates marketing. The choice of the market location is one of the most important decisions influencing the success of a small-scale farmer business. One of the limiting factors in the distribution of agricultural commodities is transport and storage facility.

2.5 SUMMARY

The role of micro-scale agriculture in the form of community gardens should not be neglected, as this remains an important

coping strategy particularly for women and those who are unemployed. Agriculture in South Africa has a central role to play in building a strong economy and, in the process reducing inequalities by increasing incomes and employment opportunities for the poor while nurturing our inheritance of natural resources.

The following summarized points need to be borne in mind in the business of small-scale farming:

a) A small-scale farmers lack financial resources.
b) Small-scale farmers have the least access to enough land and irrigation
c) Small-scale farmers are isolated from markets and lack information about business management.
d) There is lack of training about resources management in rural areas.

One of the pressing agricultural marketing problems is that of providing adequate transportation facilities at a reasonable cost to move the increasing production from farms to markets. It must be the government's responsibility to improve the economic lot of communities by empowering communities to adopt technologies such as fertilizer application, the use of hybrid seeds, the use of green houses for seed bed preparation and the use of irrigation facilities.

Special attention should be given to the needs of communities or small-scale farmers to ensure equitable access to markets. Access to agricultural financing should be broadened to include previously disadvantaged and beginner farmers and that access to existing institutional infrastructure such as the co-operative system should be broadened to include those previously denied of this access.

Community empowerment concerning the management of resources for sustainable development is crucial. Further, the use

of environmental resources and their impact on livelihoods of the poor needs to be more fully understood. The degradation of the natural resources occurs in varying degrees on arable and grazing land irrespective of the sector or form of land tenure. Capacity building about resource management is important as well. This degradation processes exposes the soil surface, depletes fertility, causes soil erosion and inefficient use of water.

The empowering of communities about agricultural production management is a development strategy aimed at facilitating economic growth. Communities must be provided with inputs, empowered to use hybrid seeds and irrigation facilities so that their production could not be seasonal but they could be able to produce throughout the year. Irrigation management is the application of technology to allow greater control of water use in order to increase productivity.

The policy to facilitate such development needs to be formulated. In rural areas, the role of micro-scale agriculture on community gardens offers similar livelihood opportunities to employment.

There are three aspects of development:

1. The adoption of technology here the research system must be strongly linked to technology dissemination which would move away from simple message systems to participatory approaches.
2. Resource management and the building of markets and provision of information.

5.4 CONCLUSION

Agriculture remains an important source of livelihood at Phongolo and it is the mainstay and backbone of the communities' economy. It is an indisputable fact that its proliferation is dependent upon empowerment and capacity building. Although small-scale agriculture makes a small contribution to household

income, however majority of the people continues to engage in agricultural production. Improving the agricultural sector should thus not be neglected since agriculture is the backbone of the country.

QUESTIONNAIRE

SECTION 1:ACCESS AND MANAGEMENT OF LAND

1. DO YOU HAVE ACCESS TO LAND?

YES	NO

2. IF YES WHAT IS THE LAND USED FOR?

   a) TO GROW SUGARCANE
   b) TO KEEP LIVESTOCK
   c) TO GROW VEGETABLES

3. IS THE LAND FULLY UTILIZED, IF NO WHAT IS THE REASON?

   ……

4. WHAT PREVENTATIVE MEASURES DO YOU TAKE TO MANAGE RESOURCES?

   ……

SECTION 2: PRODUCTION

1. LIST THE CROPS YOU GROW

COMMON NAME	GROWING SEASON ▪ SUMMER ▪ WINTER ▪ BOTH	TYPE OF SEED ▪ HYBRID ▪ INDIGENOUS	INTENTION OF GROWING CROPS ▪ SELL ▪ CONSUMPTION

2. WHAT METHOD IS USED TO ENRICH THE SOIL?

FERTILIZER

GREEN MANURE
COMPOST
NONE
CROP ROTATION
OTHER

3. HOW OFTEN DO YOU FERTILIZE YOUR CROPS?

……

4. DO YOU PRACTISE SOIL TILLAGE?

YES	NO

5. DO YOU PRACTISE CROP ROTATION?

YES	NO

6. DO YOU HAVE STORAGE FACILITIES?

YES	NO

7. DO YOU IRRIGATE CROPS?

YES	NO

8. IF YES, WHAT IS THE SOURCE OF WATER?

a) RIVER

b) DAM

c) RESERVOIR

d) OTHER ……

9. WHAT TYPE OF LIVESTOCK DO YOU KEEP?

COMMERCIAL	INDEGINOUS

10. HAS EXTENSION STAFF VISITED YOU?

YES	NO

SECTION 3: DISTRIBUTION OF AGRICULTURAL COMMODITIES

1. WHERE DO YOU SELL AGRICULTURAL COMMODITIES?

COMMUNITY
TOWN MARKET
NEXT TO THE ROAD

2. DO YOU TARGET SPECIFIC MARKETS?

YES	NO

IF YES HOW?

……

3. HOW MUCH INCOME DO YOU GET FROM YOUR PROJECT?

……

4. HOW DO YOU TRANSPORT YOUR COMMODITIES?

……

5. WHAT INPUTS DO YOU NEED TO FACILITATE MARKETING?

……

6. DO YOU GET TRAINING ABOUT BUSINESS MANAGEMENT?

……

7. WHAT HELP DID EXTENSION WORKERS OFFER REGARDING MARKETING?

……

8. DO YOU DETERMINE WHAT TO PRODUCE OR IS THE PRODUCE MARKET-DRIVEN?

……

SECTION 3: PROBLEMS

1. WHAT PROBLEMS DO YOU EXPERIENCE AS SMALL SCALE FARMERS? STATE BELOW

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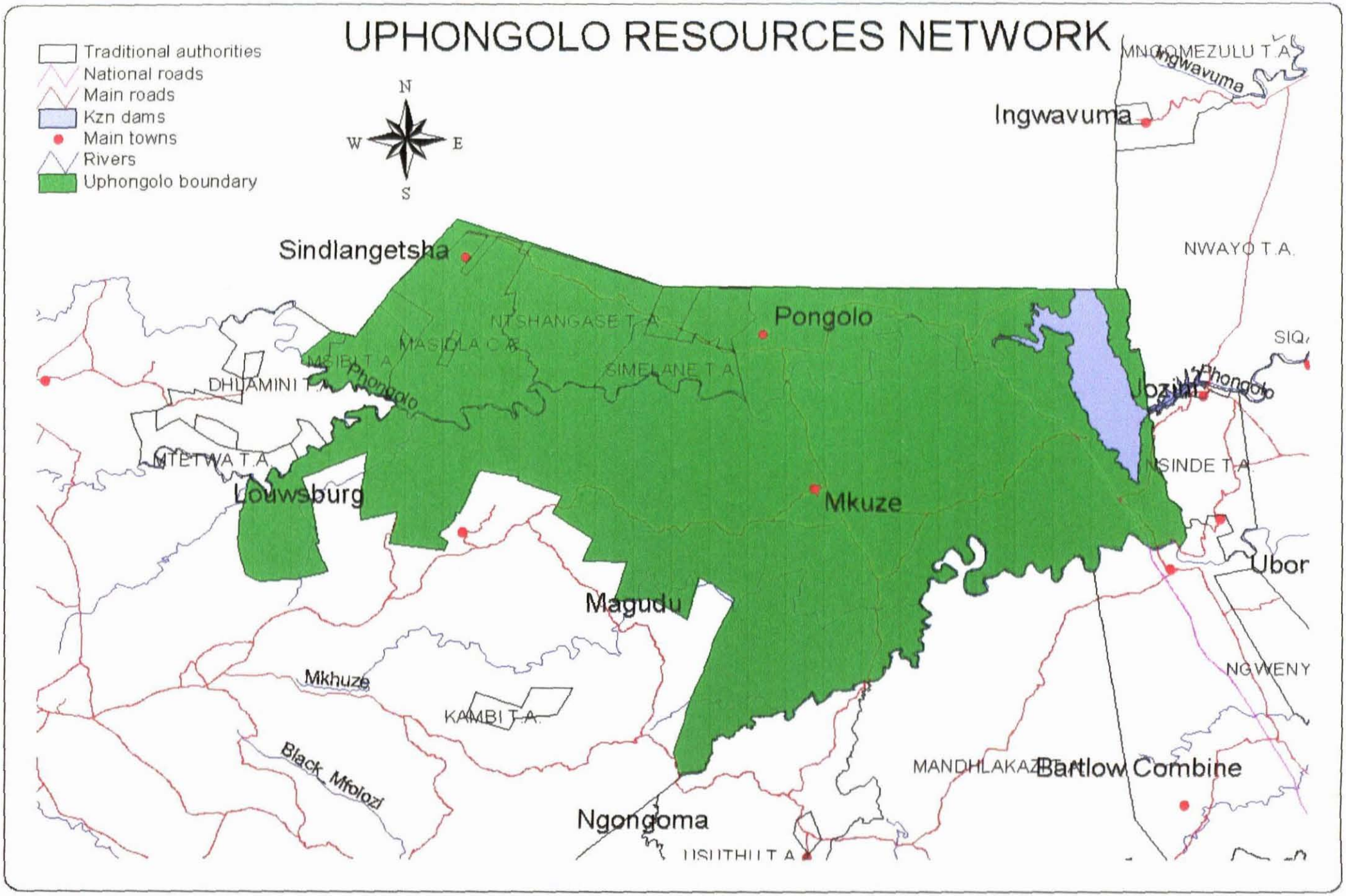
UPHONGOLO RESOURCES NETWORK
Traditional authorities
National roads
Main roads
Kzn dams
Main towns
Rivers
Uphongolo boundary
N
W
E
S
Sindlangetsha
Pongolo
Ingwavuma
Louwsburg
Mkuze
Magudu
Ubor
Ngongoma
Bartlow Combine
NTSHANGASE T.A.
MASIDLA C.A.
MSIBI T.A.
SIMELANE T.A.
DHLAMINI T.A.
MTETWA T.A.
NWAYO T.A.
NSINDE T.A.
NGWENY
KAMBI T.A.
MANDHLAKAZI T.A.
USUTHU T.A.
Phongolo
Mkhuze
Black Mfolozi