

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 OBJECTIVES**

Commercialisation of subsistence agriculture implies increased participation, or, rather, an improved ability to participate, in output markets. In the developing areas of South Africa, like in other developing countries, smallholder farmers find it difficult to participate in markets because of a range of constraints and barriers reducing the incentives for participation. These may be reflected in hidden costs that make access to markets and productive assets difficult.

Transaction costs, that is, observable and non-observable costs associated with exchange, are the embodiment of access barriers to market participation by resource poor smallholders (Coase, 1960; Delgado, 1999; Holloway et al, 2000). These include the costs of searching for a trading partner with whom to exchange, the costs of screening partners, of bargaining, monitoring, enforcement and, eventually, transferring the product to its destination (Jaffee and Morton, 1995; Hobbs, 1997). Transaction costs, however, do not only include the costs of the exchange itself, but also encompass costs associated with the reorganisation of household labour and other resources in order to produce enough for the market.

The main objective of this study is to investigate the extent to which transaction costs affect the market participation behaviour of smallholder farmers in the Northern Province of South Africa. The identification of these transaction cost factors could assist in identifying policy interventions and/or institutional innovations to alleviate constraints and improve the ability of small-scale farmers to be part of the commercial agricultural economy. Transaction costs differ between various households due to asymmetries in

access to assets, information, services and remunerative markets. The study will therefore also investigate the factors contributing to different levels of transaction costs amongst households.

The specific objectives of the study are:

- to identify underlying transaction cost factors influencing household behaviour in market participation in the Northern Province of South Africa,
- to identify factors that influence the decision of these farmers to participate in output markets,
- to identify factors that could contribute to increased participation in agricultural output markets, and
- to make recommendations to support policy formation and implementation of agricultural development programmes.

Thus, this study aims to find ways of accelerating the participation of previously disadvantaged farmers into mainstream agriculture. It attempts to assess the extent to which institutional factors, particularly transaction costs, are responsible for a low participation rate, and attempts to explain this. The study also aims at suggesting ways to create an appropriate environment for emerging farmers to contribute to rural growth.

## **1.2 JUSTIFICATION**

South Africa continues to strive for empowerment of those who were denied opportunities under apartheid. The process of empowerment is about giving disadvantaged communities and individuals more choices, and, in the case of agriculture, removing the dualism and fully integrating and democratising the sector (Kirsten, van Zyl and Vink, 1998). This process is important both for sustainable economic growth and for the alleviation of poverty and inequality.

Various efforts to promote small-scale farming have been noted in the past decade. It remains evident, however, that much more needs to be done to make a positive difference in terms of the political objective of an integrated

agricultural sector. Integration will only happen when smallholder farmers fully participate in the market.

Farmers in the neglected and less developed rural areas are generally poor. According to a discussion paper on food security (DALA, 1997; MALA, 1998), many households are vulnerable to food insecurity. Unemployment is high and tends to rise as household members lose jobs in the urban centres. Farmers in these areas are not really part of commercial agriculture. This is one of the reasons that the contribution of smallholder agriculture to the gross national product is still limited in South Africa. The majority of disadvantaged farmers is not part of mainstream agriculture and practises subsistence agriculture in overcrowded, semi-arid areas in the former homelands. This kind of subsistence farming is characterised by low production (and productivity), poor access to land, and poor access to inputs and credit. In order to generate enough income these farmers tend to engage in off-farm (or non-farm) income generating activities.

It is, however, possible for smallholder farming to survive economically when given a set of opportunities. After all, subsistence farmers are used to take rational decisions in order to adapt to conditions they find themselves in. For example, given a set of resources, farmers will strive to optimise production. Another particular and critical set of opportunities involves opening access for smallholders to interact with other economic agents.

To a large extent the process of agricultural transformation in South Africa involves moving households from subsistence production to producing for the market. Producing for the market provides a number of benefits and advantages. In particular rural employment is promoted and income is generated (Ngqangweni, 2000). The commercialising environment provides a potential for increased production and thus for improving food security for the rural poor. Furthermore, several studies (Ngqangweni, 2000; Delgado, Hopkins, Kelly *et al*, 1998) have shown positive and strong multiplier effects of investing in agriculture. In other words, agriculture has an important role to play in fostering rural development and poverty alleviation. It is through

commercialisation of smallholder agriculture that the previously disadvantaged groups can become a significant part of the economic base of rural economies.

Very few smallholder farmers participate in the markets. A range of impediments for market participation has been identified. They include lack of assets, market information and training. An added factor is that farmers are located far away from the market and have poor access to infrastructure. Several studies (Van Rooyen, Vink and Christodoulou, 1987; Kirsten *et al*, 1993; and Kirsten, 1994) have in the past referred to the need for structural reform if participation of black farmers in the commercial agricultural sector is to be enhanced.

It is to be appreciated that efforts to promote structural change, such as land reform, improved access to credit and a number of markets, have benefited some, albeit a small minority of black farmers. But these reforms have not been sufficient to improve the participation in commercial agriculture of the majority of subsistence and emerging farmers.

There are transaction costs barriers to participation that can only be overcome by institutional innovation. Research is therefore needed to identify policy options that will stimulate the transition of smallholder farmers to become commercial operators. This study aims to propose ways to alleviate or remove constraints that inhibit participation in agricultural markets.

### **1.3 BACKGROUND**

#### **1.3.1 Exclusion of smallholders from markets in South Africa**

South Africa is classified as an upper middle-income country (World Bank, 1997). A number of studies conducted in South Africa, however, show high levels of poverty in rural South Africa. According to the poverty report (1998) just under 50% of the population (that is about 19 million people) live in the poorest 40% of households and are thus classified as poor. It is striking to

note that a majority of the poor are located in predominantly rural provinces, such as the Northern Province and Eastern Cape. These provinces have poverty rates of about 70% and 60% respectively. In particular, poverty is manifest in the former homeland areas where Africans are located. These homelands emanated from the separate development policies initiated at the beginning of the twentieth century. Under these policies the former homeland areas were provided with inadequate infrastructure and services. Generally, farmers in these areas had poor access to resources such as land, credit facilities and technology (van Rooyen, 1995).

The process of exclusion must be seen in its historical context and has caught several authors' attention. Terreblanche (1998) and Vink and van Zyl (1998) have provided an historical account of how the exclusion started in the beginning of the century as white monopoly got established in both the political and economic sectors. In the process, blacks were kept in the fringes of socio-economic development. In agriculture, the unfairness of the system came to light when the Tomlinson recommendations were tabled espousing the improvement of conditions for blacks in the reserves (Houghton, 1956; Kirsten, 1994), which, incidentally, were not accepted by the then government (Anonymous, 1956; Kirsten, 1994). Instead it was viewed that the exclusion of blacks, then referred to as indigenous people, from the markets had to do with realistic physical conditions such as transport and climate, but mostly depended on their unwillingness to integrate into a western economic system (Anonymous 46, 1957). This resulted in different agricultural policies being applied to white commercial agriculture and to black small-scale farmers in the homelands (Vink, Kirsten and van Zyl, 1998) which changed land use patterns and affected farm incomes for both groups of farmers (*ibid*, 1998; D'Haese and Mdula, 1998).

Because of the restrictive setting in the homelands, households largely depended for their income on jobs in areas reserved for whites. Many households attempted multiple coping strategies to provide for their livelihood (Mekuria & Moletsane, 1996; May, 1998). For example, members of a household would be involved in subsistence farming on small plots, and at the

same time they would commute or migrate to and from the place of work. Despite the effort put into it, these activities could not provide enough income to move households out of poverty. In turn this had negative implications for food security. In general, however, small-scale farming has always been the mainstay of coping strategies in food security. Parallel to the poverty pattern mentioned earlier, most of the vulnerable households are located in rural provinces such as the Northern Province.

### **1.3.2 Smallholders can survive economically**

Small-scale farmers have continued to produce in the face of unfavourable conditions. In fact, one of the paradoxes of existence of smallholder farmers pertains to their sustainability in spite of harsh circumstances. In South Africa, the small-scale farmers have subsisted on “uneconomic farm units” as a result of the Land Act of 1913 that excluded small-scale farmers from owning land. Moreover, these farmers have had very limited support services, which made it difficult for them to operate economically.

In line with Schultz' hypothesis of small but efficient, several studies have established that smallholder farmers do have comparative advantages in the use of resources (Ngqangweni, 2000; McIntire and Delgado, 1985), implying that they use resources efficiently, that is, resources are not wasted. The study by Ngqangweni has shown what kind of activities smallholders in the Eastern Cape could pursue profitably and with an acceptable level of efficiency. Some of the activities, such as indigenous beef and citrus production, showed considerable potential and good opportunities under low fixed-cost technologies and irrigation conditions. Heavy infrastructure investments boost the 'per unit costs' but better marketing arrangements lower transaction costs, and this boosts the returns to the farmer and consequently to society as a whole.

In general small-scale farmers have the advantage of flexible family labour resources and can allocate labour to activities with higher marginal returns. For example, dryland low-value farming is normally left for the old men and

women since able-bodied men and women are involved in migratory jobs, and younger children go to school. When farming returns increase, for example through access to more land, or irrigation, more household members are involved and supplement this with hired labour. In this way a number of smallholder farmers make profits and are able to survive economically. Pertinent characteristics of such farmers are access to market, information and assets.

### **1.3.3 Smallholders survival creates linkages for economic growth**

As mentioned before, smallholders dominate the former homeland rural areas. Where these farmers are active and successful, other non-farm economic activities emanate as a result. Successful smallholders create a demand for non-farm sector goods (retail). This is apparent in many rural settings of South Africa. For example, a typical sample village will have a retail store located close to arable lands. Small rural towns with more non-farm business enterprises are located adjacent to thriving farming activities (normally irrigated farming). So, the linkages with other sectors get stronger when farming can generate more income, and this, in turn, is a direct result of market participation.

In his study, Ngqangweni (2000) established that consumption- or demand-side linkages which are derived from supported smallholder agriculture in the Eastern Cape Province matched those recorded in studies of similar situations in Africa and Asia (Delgado *et al*, 1998). These linkages were strengthened by cash inflow into the rural areas in the form of non-farm incomes from urban areas. The study asserts that the relationship provides opportunities for tradable smallholder agriculture to be a significant source of the required initial income injection, which comes from sale of local agricultural tradables. These arguments provide an additional motivation why it is important to improve the productivity and increase the level of sales of small-scale farmers. Through these increased levels of income as a result of increased sales, farmers stimulate a range of non-farm activities in the economy, which provide job opportunities for the rural poor. However,

increasing on-farm productivity and increasing the level of sales are hampered by several constraints.

#### **1.3.4 There are transaction costs barriers that require new institutions**

A range of constraints and barriers limits smallholder participation in the agricultural market. As a result most of the smallholder products are wasted after harvesting or sold at very low prices. Because of the uncertainty about prices, many farmers would take any price offered by buyers when there is a chance to participate. Farmers generally do not have the required information and means to locate better markets. Many a time reliable markets are located further away and are difficult to access. Only farmers with assets such as vehicles are able to move around in search of a better market. When one visits market centres, it is not uncommon to meet farmers who used their own vehicles to get to the market. These farmers are also better informed about various buyers and are normally well connected with neighbouring (white) farmers. There is frequent road traffic between white farms and communal villages where smallholder farms are located. This implies that farmers with assets can interact more effectively; on the other hand it also means that the majority of small-scale farmers are out of touch with these markets.

It is, thus, evident that a range of transaction cost barriers prevents small-scale farmers from participating in commercial markets. It follows that this lack of commercial activity by small-scale farmers does, ultimately, not lead to any of linkage benefits as anticipated. There is therefore a need for alternative institutions that can overcome barriers to market participation. In other parts of Africa (such as Ethiopia) farmers have the alternative to use brokers to market their grain (Gabre-Madhin, 1999). In South Africa, however, some farmers (particularly maize producers) tend to engage institutions such as co-operatives and millers to take their grain for processing, and storage, and these sometimes provide transport services. Despite this a large proportion of this grain is consumed and only a minor portion is sold, implying the persistence of barriers to remunerative options.



Research is therefore needed to identify and suggest policies and strategies to overcome transaction cost barriers. This is based on the argument that transaction costs prevent market participation. Furthermore it is expected that such research will show which the policy interventions most needed are.

#### **1.4 HYPOTHESES**

The main hypothesis of the study is that farmers facing lower transaction costs will participate more in the agricultural markets than those farmers facing high transaction costs. These transaction costs reflect the character of the market, but are mainly embedded in household characteristics and their economic environment. As a consequence farmers respond to market barriers by opting for alternative market institutions.

The specific hypotheses to be tested are the following:

Farmers with better access to information are likely to participate in the market, other things the same. The more information farmers have about the market, the more they will participate in the market:

- Extension contact makes farmers aware of possible market outlets for their products. As such, farmers with better contacts have a better chance of participating in the markets. This doesn't necessarily lead to higher levels of participation.
- Education allows farmers to interpret information about the market. So, farmers with better education are more likely to participate in the market. The opposite is also true; the lower the education level the less the market participation.
- Proximity to markets allows farmers to contact potential markets for information about the market conditions. Even when farmers are busy selling, proximity allows them to present the products to the market in

time at lower costs. As such, the proximity to market centres is negatively related to market participation.

- Good road conditions to the markets make it possible for farmers to market the products cheaply. Those farmers facing good road conditions tend to participate more in the markets than those who face poor road conditions do.

Farmers with more assets (or increased wealth) are likely to participate more in the market, other things the same:

- The size of the farm (land) used for production is positively related to market participation. When farmers have more land their production will be higher, thus making it sufficient for market participation since the per unit transaction costs will be lower due to the economies of scale. The more the farmer can produce the more will be marketed.
- Ownership of vehicles will increase market participation. This allows farmers to access information about the market and be in a position to deliver products.
- Farmers owning more livestock will participate more in markets. Livestock ownership tends to serve as a security for risk of market failure on the one hand, and contributing to productive assets on the other hand.
- Access to liquid assets, such as non-farm and pension earnings allows farmers to invest in marketing activities. Access to non-farm income and pensions will lead to more market participation.

The higher the risk or uncertainty farmers face, the less likely they will participate in agricultural markets. The risk attitude of farmers emanates from the structure of the household:

- Households headed by females are less likely to participate in the market. This leads to higher transaction costs since women are regarded as lacking credibility as contractual parties owing to the perception that courts (particularly tribal) will favour men in the event of a dispute with a woman.
- Age is positively associated with participation in agricultural market since older farmers may be more experienced in marketing management and tend to have stronger networks and more credibility, thus facing lower transaction costs. This relationship is expected to be stronger than the alternative hypothesis that younger farmers are less risk averse.
- The size of the household is negatively related to participating in the market. Normally, household members are both production and consumption units. When there are fewer opportunities to contribute productively, household units will be more of consumption unit, as is the case in the developing areas of South Africa. That is, larger households have more mouths to feed and therefore less to sell.

## **1.5 ANALYTICAL METHODS**

The study employs two analytical methods to test the above-mentioned hypothesis:

Firstly, descriptive statistics is applied to the basic characteristics of the sample households in order to assess the difference in the household participation. This employs both frequency and means to describe the households.

Secondly, selectivity models are applied to identify and test significant factors of market participation. The selectivity models involve two-step estimation

similar to the Heckman's two-stage procedure. Firstly, probit models are estimated to determine the factors affecting decision to participate. Then, heckits (OLS accounting for selectivity bias) are estimated in the second stage to estimate the significant factors contributing to the level of participation. The two-step selectivity procedure is similar to the tobit model decomposing the probability to participate and the level of participation - hence tobit models are also estimated to validate the selectivity models.

The analysis is based on the information collected in the Northern Province. The subsequent sections overview the salient features of the Northern Province from which the study sites were selected. The procedures for selecting sampled households will also be discussed, which is followed by a discussion of the agricultural setting of the study area.

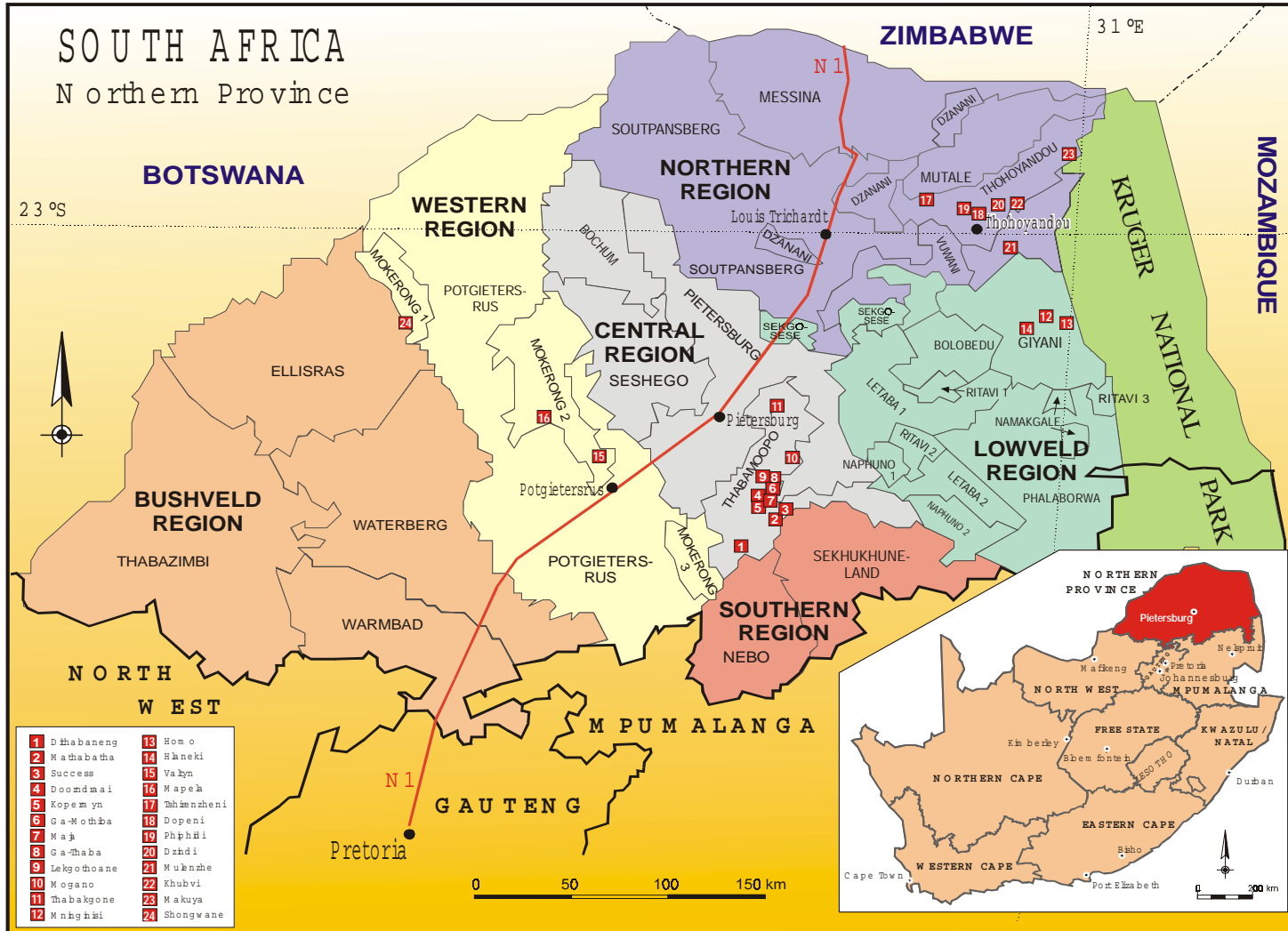
## **1.6 THE STUDY AREA**

### **1.6.1 Overview of the Northern Province**

#### 1.6.1.1 Background of the province

The Northern Province is situated in the far northern part of South Africa, which is, interestingly, situated in the far southern part of Africa. The Province is adjacent to the Northwest Province, Gauteng and Mpumalanga and shares borders with Botswana, Zimbabwe and Mozambique (Map 1). The Northern Province covers 9,6 % of South Africa's total area, amounting to 116 824 km<sup>2</sup>. This subsection and subsequent subsections in the section are based on NPDA (1996) and DBSA (1998).

The Province is divided into six regions: viz. Northern Region, Lowveld Region, Central Region, Southern Region, Western Region and Bushveld. The regions are further divided into sub-regions and/or districts.



MAP 1. THE DISTRICTS AND SITES IN THE STUDY AREA

The Northern Province can also be divided into several topographic zones. In the east there is a flat to gently undulating Lowveld plain, at an altitude of 300 to 600 m, bounded in the west by the northern Drakensberg escarpment and Soutpansberg, with steep slopes and peaks up to 2 000m above sea level. The almost level Springbok flats in the south lie at an altitude of 900 m, while the Waterberg and Blouberg to the north, with undulating to very steep terrain, reach 2 000 m. The north-west zone is a flat to undulating plain, which slopes down to the north and west, at 800 to 1 000 m.

The province falls in the summer rainfall region. The Lowveld region is hot and dry, with no frost and an average rainfall of less than 500 mm per annum. The mountains are cooler and wetter, with rainfall of 1500 mm or more in places. To the west, the rainfall varies from 600 mm on the Springbok flats to less than 400 mm on the Botswana border, where it can be extremely hot in summer. Dryland cultivation can only be practised on the Springbok flats and on the eastern escarpment and its foothills.

The major rivers are the Limpopo in the north, and the Olifants and Letaba further south, all of which drain eastward. The Limpopo only flows strongly occasionally, while the Olifants and Letaba are heavily utilised for irrigation, especially east of the escarpment. Most part of the province is very dry. Drought is an ever-present threat in the north, and a growing human population places considerable pressure on the existing resources especially in the Letaba catchment area.

Black and red fertile clay soils occur on the Springbok flats, with reddish-brown sandy loams to the north and west. The mountains have deeper, highly leached red soils in the wetter areas, with exposed rock where the climate gets drier. Reddish-brown, gravelly soils, which have low fertility, predominate in the Lowveld, with the best agricultural soils being alluvial soils next to most of the rivers. The Province does not have much high potential agricultural soil.

Of the estimated total of 12 million hectares, 67% (8 million ha) is utilised as agricultural land. Of these 8 million hectares of farmland, nearly 10% (0.8 million ha) is utilised as arable land, 67% (5.4 million ha) as natural grazing, 18.4% (1.5 million ha) for nature conservation, 1.1% (0.088 million ha) for forestry and 2% (0.16 million ha) for other purposes. About 76% of arable land (0.61 million ha) is allocated to dryland cultivation and forms the most important kind of cultivation occurring in the Northern Province.

In 1995 about five million people resided in the Province, making it the fourth largest province, with approximately 13% of the country's total population (DBSA, 1998). Of the five million people, 90.8% resided in rural areas, thus the rural inhabitants of the Province made up 22% of the country's total rural population. In 1995 the Province had an annual population growth rate of 3 to 4%, and a population density of 38 persons per square kilometre. Of the 5.2 million people, 55% (2.86 million) were female. About 48% of the population were 15 years old or less. The Province had the lowest human development index of the country, namely 0.47.

#### 1.6.1.2 The economic structure

The Northern Province contributed only 3.6% to the GGP in the RSA during 1994. The biggest contribution, 49% to the GGP in the Northern Province, during this period came from the tertiary sector: trade, transport, finance, community services, government and other producers. The primary sector, consisting of the agricultural and mining sectors, was the second biggest contributor to the GGP (with 32.7%). Of this, 32.7%, agriculture contributed with 9.6%.

Agriculture has grown by a mere 3.8% between 1980 and 1991. The low contribution to the GGP may be due to drought in the latter years of this period. Despite this, the agricultural sector had a reasonable growth performance index

(GPI), resulting in the Province topping the rest of the country with respect to GPI.

In 1993 the gross income from agriculture was R1414 million. Of this amount, 17.3% was from field crops, 46.2% million from horticultural products, and 37% from livestock. These statistics show the importance of horticultural and livestock products in the province.

The total expenditure on intermediate goods and services, i.e. those items used in production, was R865 million. Of this amount farm feed, maintenance and repairs, and fuel contributed with 22.3%, 15.8% and 15.7% respectively. When expenses are subtracted from gross income, the difference is the contribution of agriculture to the GDP (Gross Domestic Product) amounting to R558 million.

The real net income from agriculture in the Northern Province increased from R156 million in 1983 to R252 million in 1988, but declined rapidly in the period from 1991 to 1993 (NPDA, 1996). Thus, when other indirect farming expenses such as indirect taxes and depreciation are subtracted from the contribution to GDP, a net loss of R28 million from agriculture was realised in 1993.

The economically active population in the Northern Province was 1 215 508 in 1994 (DBSA, 1998). The contribution to employment by the agricultural sector in this Province is 20.1%. According to the expanded definition of unemployment, the Northern Province has at present an unemployment rate of 47%.

#### 1.6.1.3 Farming enterprises

The main farming enterprises in the Northern Province focus on the production of vegetables (NPDA, 1996). Within the Province the production of vegetables contributes an average of about 22% to the gross income from agriculture. On average the production of vegetables contributed approximately 18% to the total



gross income from vegetable production in South Africa. From the composition of horticultural products in the Northern Province, it is clear that the production of vegetables is the most important (49.1%), followed by citrus fruit (25.9%) and subtropical fruit (17.5%).

The production of nuts forms a small part of the gross income from agriculture in the Northern Province, yet it makes up about 43% of the gross income from nuts in South Africa. The production of citrus and subtropical fruit in the Northern Province contributes about 64% to the gross income from citrus and subtropical fruit in South Africa.

Animal products are the second largest generators of gross income from agriculture within the Northern Province (NPDA, 1996). The main animal products produced in the Province are beef, poultry, fresh milk and dairy products, and pork. From the composition of animal production, beef (53.6%) is the most important, followed by poultry (22.2%), fresh milk and dairy products (11.8%) and pork (7.9%).

The contribution of field crops to the gross income from agriculture in the Northern Province is relatively small. On average, for 1983, 1988, 1991 and 1993, field crops contributed 22.7% to the gross agricultural income of the Province. Cotton only contributed 5.9%, tobacco 4.7% and maize 4% to the gross agricultural income. The composition of field crops produced in this Province is cotton (24.3%), tobacco (21.1%), maize (17.4%) and sunflower seed (10.7%). On average the production of cotton in the Northern Province contributed more or less 56% to the total gross income of cotton produced in South Africa, sisal 51%, cowpeas 38% and tobacco 22%. Important field crops for smallholder sector are maize, grain sorghum and beans.

The Pietersburg Fresh Produce Market was declared a national fresh produce market in May 1995. The activities of the market have generally been small,

compared with other national fresh produce markets in the country. As of the end of 2000 only two market agents, namely the National Potato Association and the Northern Transvaal Cooperative, operated on this market. There are at least 260 other formal marketing outlets in the Province. Seventeen of these are grain and oil grinding mills, 13 processors, 12 abattoirs, some eight canners and preservers, 24 suppliers and distributors, 154 meat markets, 19 dairies and 13 fruit and vegetable markets.

### 1.6.2 Selection of study sites

For the purpose of the research the Northern Province was divided into five regions in 1997 when the survey was conducted: the Northern Region, Lowveld Region, Central Region, Southern Region and the Western/Bushveld Region. The reason for stratification is that the regions emerged from different administrations (of the former Lebowa, Venda, Gazankulu and central RSA), which provided different support services to farmers, and thus might lead to different transaction costs. All five regions were selected. Within each region one district was randomly selected by picking from a shuffled pile of district names in the region. An average of five sites was to be selected from each district, with an additional site. In two districts (in the Southern and Northern Region) all six sites were visited. In other regions the five sites were regrouped to as few as three sites (Map 1). Table 1.1 shows the distribution of sites and the respondents by regions.

Table 1.1: Distribution of research sites and respondents

Region	No of sites	Respondents	Group discussions
Northern	6	24	4
Lowveld	3	18	2
Central	4	29	4
Southern	6	57	2
Western/ Bushveld	3	29	3
Total	22	157	15

The Northern Region consists mainly of districts of the former Venda homeland areas (which include Dzanani, Malamulele, Mutale, Thohoyandou and Vuwani), some patches of the former Gazankulu homeland (mainly Malamulele area), former Lebowa (most of the Bochum area), and also former RSA areas such as Messina and Soutpansberg. The region has predominantly good agricultural land due to relatively high rainfall. The main town, Thohoyandou, is located in the Thohoyandou district. Accordingly, this district was randomly selected. Six research sites were randomly selected from a list of ward names provided by the extension service. From each ward a list of farmers was drawn, thus a total of twenty-four respondents were selected and interviewed. The information from household interviews was followed up by group discussions that elaborated on pertinent issues raised during the face-to-face interview. Four group discussions were conducted in the Northern Region.

The Lowveld region comprises mainly the former Gazankulu districts (such as Giyani, Hlanganani, Lulekani and Ritavi), some districts of the former Lebowa (mainly Naphuno, Bolobedu, Namakgale and Sekgosese), as well as the areas of the former RSA (Letaba and Phalaborwa). The lowveld areas of the region are mainly horticulture (fruit) production areas. For the purpose of the study, the Giyani district was selected. The Giyani district produces a range of agricultural products. The district is also the locus of the regional offices of former Gazankulu, located in the town of Giyani. The research sites selected were Hlaneki, Homo, and Mninginisi. About 18 households were interviewed from these three sites. Only two group discussions were conducted.

The Central region comprises predominantly the former Lebowa districts of Mankweng, Sekgosese, Seshego, and Bochum) and the Pietersburg districts of the former RSA. Pietersburg serves as the capital city of the Province. The Mankweng district was selected randomly from other districts. Although the northern areas of the central region are livestock producing areas, by contrast Mankweng district, lying south east of Pietersburg, is a predominantly maize

producing area. The research sites included GaMamabolo, GaMolepo, GaThaba, as well as Koppermyne (or GaMaja and GaMothiba). About 29 respondents were interviewed in four sites.

The Southern Region comprises areas of the former Lebowa districts Sekhukhune, Nebo, and Thabamoope. This region, located south of Pietersburg is mainly arable with relatively low livestock production. The Thabamoope district was selected for the survey. Two sites were selected, namely GaMathabatha and Dithabaneng. The former site is situated in a mountainous area with sufficient water, while the latter is dry. The latter site is located close to Lebowakgomo, the regional offices of the Southern region. About 58 respondents were interviewed. Two focus groups were involved.

Finally, the Western region mainly comprises the former Lebowa districts of Mokerong (or Mahwelereng), Zebediela and Phalala, as well as the former RSA areas of Potgietersrus, Ellisras, Thabazimbi, Warmbaths, and Waterberg. Mahwelereng is close to Potgietersrus, while Phalala is closer to Ellisras. The sites were picked from both Mahwelereng and Phalala. The motive was that there was still no clarity as to whether Phalala would fall under the then proposed Bushveld region. The Bushveld is an area further west in the Province, with the major towns Naboomspruit, Nylspruit, Warmbaths and Thabazimbi. It comprises predominantly the former RSA areas. The Western region is relatively dry, although farmers focus on maize production in Mahwelereng, and livestock in the Phalala area.

### **1.6.3 Agricultural setting of the study sites**

Agricultural production in the Northern Province is diverse. This is reflected by the diverse agricultural production systems in the study areas. A majority of households (almost 70%) across the regions tend to focus on the production of field crops, dominated by maize in area planted and level of production. A typical

sample household would plant 1.56 ha of maize, which covers 50% of the arable area. Only 26% of the households produce maize under irrigation. This applies to some households in Mathabatha area in the Southern Region as well as to Mapela in the Western region. Maize in the Central Region, the Lowveld Region and the Northern Region is grown under dryland conditions. These areas tend to have reasonable level of rainfall.

Other field crops are also grown in the area, though not on such a wide scale as maize. They include grain sorghum, millet, beans and watermelons grown under dryland conditions. Generally these are grown as a mixed-cropped system. In such cases, planting methods are mainly through broadcasting during ploughing (which is normally done by contractors). Other field crops such as wheat are grown in selected irrigation projects such as in Mathabatha and Mapela.

In some instances farmers would farm a plot in a project setting, while growing other field crops on individual plots. Monocropping or intercropping is emphasised in project settings, while mixed cropping is practised mostly on individual plots. Government extension officers guide the projects by recommending the best practices. Their advice centres on practices such as planting time and application of recommended types of fertilisers and seeds. In the projects fertilisers and seeds are normally bought from co-operatives, or supplied directly by agents. Farmers in the projects are expected to follow certain production programs to harmonise the provision of inputs and service, with output marketing.

Some households in the study area are also involved in horticultural production. Less than 1% of households surveyed grow subtropical fruits such as bananas. These households are mainly in the Lowveld region, in particular at the Homo irrigation scheme. Vegetables are grown across the regions, though by relatively few households. Most of vegetables grown in the study area are cabbages, spinach, tomatoes, potatoes etc. Horticultural crops are grown under irrigation.

Livestock production is prevalent in the Northern Province. The incidence of higher livestock production, however, increases towards the north-western part of the Province. It follows that most of the livestock is found in the Western Region. The livestock categories include large-stock (mainly cattle), small-stock (mainly goats) and poultry. The livestock is kept in kraals at night and allowed to graze in communal camps during the day. Generally livestock is kept as precautionary assets, disposed off only when there is a need for cash. Local buyers provide a major market for small-stock, while large-stock is sometimes auctioned.

## **1.7 THE SURVEY AND DATA**

### **1.7.1 Sampling procedure**

As mentioned before, the procedure for sampling was stratified by region. All five regions were selected. Within each region, districts were selected randomly from a shuffled pile of district names. Within the district, extension wards (composed of villages) were also selected randomly from a shuffled pile. Sampling of households involved obtaining a sample frame of farmers from the extension office. Households were then randomly picked from the list. Where the list was not available before visiting the research site, farmers were convened, matched with the extension officer's register and randomly selected for interview. The heads of the households were interviewed. In the absence of the head (husband), the wife or the second member was interviewed. The main respondent would provide most of the information, but consulted with other household members where necessary.

### **1.7.2 Data collection**

The information was collected in the Northern Province in 1997 following two-stages; face-to-face interviews with individual farmers, and group discussions with focus groups of farmers.

The face-to-face interviews were conducted with 157 randomly selected farmers. All respondents were requested to answer a set of structured questions. The respondents were given the opportunity to consult with other household members. The responses from the face-to-face interviews were reviewed, and based on this pertinent issues were identified.

These issues were then presented and discussed during a follow-up group discussion. The group consisted of a number of farmers who then elaborated on the issues. The groups were composed of farmers in the area; those who were interviewed and those who were not. They were convened through extension officers.

### **1.7.3 Variables collected**

The instrument was designed to collect a range of information. This included information about household structure, consumption of food and non-food items, factors of production (land, labour, capital, human resource, natural resources, infrastructure, and management), as well as crop and livestock production.

Not all the information was usable for the study. For the purpose of the study the following information was utilised:

- Amounts of production sold at the market. This pertained to livestock, horticulture crops, maize and other field crops.
- Characteristics of the household regarding gender and age of the household head, as well as the size of the household. Other information

collected pertained to access to income and assets. This included non-farm income, pensions, arable land, and livestock as well as transport equipment. Information reflecting the farmer's access to market information was also collected in terms of average household education, contact with extension service and proximity to the nearest town where the markets are. The conditions of the roads to the markets were also determined.

## **1.8 CAVEATS**

This study focuses on farmers in the Northern Province. These farmers are not necessarily representative of the total population of South African farmers. As such, generalisation of the results may not be possible without taking note of limitations.

The study also focuses on transaction costs as they affect smallholder farmers' decisions and level to participate in output markets. This focus might give the impression that transaction costs are the sole factors of market participation, while in fact they form part of a range of other factors affecting an entrepreneur.

## **1.9 ORGANISATION OF THE STUDY**

The study is organised in six chapters. The second chapter discusses the literature review of smallholder market participation with respect to transaction costs. The third chapter presents a theoretical and empirical model (with estimation procedure) for analysing the effect of transaction costs in smallholder market participation. The descriptive characteristics of households in the study area are then presented in chapter four. The results of the model are presented in chapter five. Finally, the summary is presented and conclusions are drawn in chapter six.