

CHAPTER 1: INTRODUCTION

1.1 Background

Major policy initiatives for social and economic development are currently being implemented in SA. There is consensus that a more equitable dispensation is needed for stability and growth. South Africa's main economic and social problems relate to unemployment, poverty and racial inequality. Although growth alone does not ensure equality, these issues are addressed through a vibrant, growing economy (Eckert, 1991; Nomvete, Maasdorp & Thomas, 1997; Fenyesh & Meyer, 1998; McDonald & Piesse, 1999; Anon., 2001b). How to obtain economic growth, to enhance livelihoods in disadvantaged communities in particular, is critical. Government policies (including the agricultural sector plan) indicate that a market driven economy is seen as the vehicle for generating wealth. A critical aspect is equitable access to opportunities and distribution of benefits, i.e. growth with equity strategies (Eckert, 1991; Nomvete, *et. al.*, 1997; Brand, Christodoulou, Van Rooyen & Vink, 1992; Van Rooyen, *et. al.*, 1998; Anon., 2001b).

As the majority of the poor and large numbers of the unemployed reside in rural areas, agriculture has a key role in equitable growth: It is a vessel to address poverty and therefore rural development (Van Rooyen, 1983; Eckert, 1996; Lipton, *et. al.*, 1996). However, weak support strategies and lack of access to resources and services inhibits agriculture's contribution (Van Rooyen, *et. al.*, 1994; Singini & Van Rooyen, 1995; Nomvete, *et. al.*, 1997; Van Rooyen *et. al.*, 1998; Kirsten, Van Zyl & Vink, 1998). Improving the welfare of the rural poor therefore depends on empowerment through access to productive resources and services, in order to utilise economic opportunities (Deen, 2001). Economic analysis proves that agriculture's role in development is often underestimated and bias towards urban development is often observed (Mellor, 1986; Eicher & Staatz, 1990; Van Zyl & Vink, 1988; McCalla, 1999). Between 1987-98 agricultural aid to developing countries (accounting for 85 % of the worlds poor) shrank by two-thirds (Anon., 2001). In South Africa an urban bias was evident in public investment, macro-economic policies and legislation. Limited investment in rural infrastructure, agricultural budgets and limited import tariffs compounded the problems of the agricultural industry (Binswanger, 1994; Van Rooyen, *et. al.*, 1994; Vink & Coetzee, 1995; Kirsten, 1998; McDonald & Piesse, 1999). However, recent policy positions as expressed in government budgets speeches (2000-2002), state of the nation addresses (1999 – 2001) as well as the agricultural strategy plan adopted during 2001, indicate a redirection from government towards development (Anon., 2001b).

This study's point of departure supports the argument that agriculture has a significant direct and indirect role to play in economic transformation and in achieving growth with equity in South Africa (Anon., 1998c; Van Zyl & Vink, 1998; Anon., 2001b). It is expected to provide a growth stimulus through a range of income multipliers and employment linkages (Eckert, Liebenberg & Troskie, 1997; Van Rooyen & Sigwele, 1998). Given that SA has a highly skewed income distribution (Makhura & Kirsten, 1999), restructuring a key economic sector such as agriculture is required to address this inequity. This will require strategic

interventions for the previously disadvantaged agricultural sector (Van Zyl, Kirsten & Binswanger, 1996). Although smallholder support internationally has a long history, in SA it has been severely constrained by policy considerations. Apartheid effectively ended black commercial agricultural production evident during the late 1800's and early 1900s (Van Rooyen & Nene, 1996; Chikanda & Kirsten, 1998), establishing a legacy of small scale production systems although significant success occurred in cases where innovative focused farmer support was implemented during the 1980s and 1990s (Singini & Van Rooyen, 1995).

Recently, the impact of the global market on SA's agriculture has been significant. A macro-level analysis of the extensive deregulation process shows that the sector has benefited (Van Rooyen, Esterhuizen & Doyer, 2001; Vink & D'Haese, 2002). Despite increased bankruptcies, efficiency and competitiveness increased substantially over the past decade. Productivity rates increased as a result of more market-oriented policies. Innovations emerged to counter high input prices (Vink, 2000). However, despite opportunities in the global market, the 'playing field' in agricultural trade is still uneven, as illustrated by significant agricultural subsidies provided by major international economies. For example, only 4% of a South African farmer's income originates directly or indirectly from government support, through research and support measures, compared with 45% for the EU and 22% for the USA (Van Rooyen, Esterhuizen & Doyer, 2001). In the North West Province of SA, the global environment is inhibitive competitive and unequal, making policy support, especially to small-scale farmers, an important instrument for development and broad based participation in the agricultural sector. In this context an important challenge is to improve competitiveness and farm level profitability at commercial and emerging farmer levels. Government support could play a significant role in enhancing the competitiveness of emerging farmers, provided that such efforts promote linkages with viable agribusiness endeavours.

The diverse character of SA's farming environment complicates restructuring and development. Describing local agriculture as typically dualistic (commercial and developing) as put forward by Lipton's two agricultures (1996) is too simplistic to adequately describe existing diversity and facilitate appropriate development strategies. A range of often confusing descriptions such as commercial, small scale, emerging, subsistence, etc., illustrates this. A particular challenge in this diverse setting is to support disadvantaged agricultural producers to establish viable economic livelihoods, through removal of structural constraints inhibiting agricultural growth (Van Zyl & Kirsten, 1998). Failure to address this will inhibit the impact that agriculture could have on economic development and livelihoods in the RSA. Development support strategies should serve the diversity along the farming continuum to achieve economic competitiveness and sustainability. Support services should cater for different agricultural groups and farming systems and should promote partnership models between public and private sectors, especially as a strategy to empower the resource poor to commercialise (Eicher & Rukini, 1994).

A comprehensive approach, mobilising private and public support in order to stimulate growth with equity in agriculture is critical: This study focuses on a comprehensive project development approach as a public delivery strategy, as basis for appropriate investments in production systems, resources and support programmes in the North West Province.

1.2 Problem statement

Price J. Gittinger in the book "The economic analysis of agricultural projects" argues that agricultural projects are the "cutting edge" of development (Gittinger, 1982 pp3-40). During the 1970s and 80s the World Bank also promoted this concept. However, its validity is increasingly questioned since the early 1990s due to a low apparent success rate (Anon., 1987; Van Rooyen, *et. al.*, 1987; FAO, 1988). The question this thesis therefore poses is whether the project approach still constitutes an effective development strategy for resource poor farmers. Through an in depth literature review and the analysis of the Sheila project in the North West Province of South Africa, the aim of this research is to assess the project approach and develop a new planning framework to re-establish it as sound approach for small farmer development.

Centrally managed, capital-intensive projects, initiated to increase production and provide employment were the mainstay of agricultural development internationally and in SA until the late 1980s. However, the contention is that these schemes largely failed, due to insufficient attention to social reality, technical complexities, management requirements and restricted capacity building. Although projects often resulted in higher production yields in the short run, this was generally not sustained. While project objectives and intentions were sound, failure resulted from undue emphasis on physical planning and failure to provide incentives to participants. Inadequate participation and top-down planning also resulted in lack of ownership (Van Rooyen & Nene, 1998). During the 1990s development agencies became disillusioned with centrally managed farmer development projects, as limited effectiveness and relatively high costs were noted (Carruthers & Kydd, 1997).

However, to some extent poor performance arose from weak implementation and management of the project cycle, rather than the model being inappropriate. A participatory planning model, emphasising ownership, may indeed be an effective development mechanism. The problem statement therefore deals with the applicability of the project planning approach to agricultural development.

Sound agricultural development strategies require focused support dealing specifically with constraints and opportunities. This should include access to resources (inputs) and services, i.e. extension, research, training and information (Singini & Van Rooyen, 1995). A strategic approach to facilitate such access is clearly required. The focus should be on optimising linkages, access to input and output markets, participation and management skills. Research into viable and sustainable practices is required while cost reduction, risk management and scale appropriate technologies must also be investigated (Anon., 1996b). High input costs prove to be an especially inhibiting factor. According to Delgado (1998), a form of integration or linkage between stakeholders in the agricultural industry is needed to mitigate these costs and facilitate access to support. Deliberate effort must therefore be made to facilitate participation, capacity building and business linkages within the value chain. An implementing agent, with the primary role to optimise linkages, could be vital in such an effort (Nomvete *et. al.*, 1997).

All this indicates that a redesigned project approach, defined as an intervention to facilitate access to support services and resources for committed groups of farmers, as part of participative planning and management should still be a productive instrument in agricultural development. The question is how this instrument can be adapted to realise its potential to reduce costs and facilitate agricultural development.

Investigating hypothesis:

Following this argument, two hypotheses are formulated for a scientific investigation: The first deals with the observation that less successful agricultural interventions (projects) were often designed on the premise of the Taylorism of 'one technology good enough for all' (Brossier, *et. al.*, 1994 as quoted by Laurent, *et. al.*, 1999). This view embodies the notion of technical optimality as the driver of economic development and ignores the reality of highly diversified agricultural structures, with equally diverse requirements for support strategies. The first hypothesis therefore reads:

Hypothesis 1: Quantification and incorporation of the economic and social diversity in an agricultural community is required to facilitate planning and implementation of equitable growth interventions and strategies.

A second hypothesis follows from the acceptance of the first hypotheses and acknowledgement that coordinated and focused project support measures albeit unique and specific, are required to integrate resource poor small farmers into commercialised agriculture. The second hypothesis therefore reads:

Hypothesis 2: A project planning and implementation cycle, accommodating diversity, constitutes a viable strategy for support of resource poor farmers, as it addresses the major issue of cost effective access to resources and services, in an integrated and holistic manner.

These hypotheses deal with two major prerequisites for agricultural development: Diversity must be described and homogeneous agricultural groups identified, before integrating activities through the project approach can provide resource poor small farmers with access to sound services and resources. This approach could contribute significantly towards achieving rural growth through outputs such as household food security, employment and economic production. This study aims to describe a 'new' and productive approach to project design and implementation. Its definition, elements, target groups, conditions etc., will aim to position agricultural projects as the 'cutting edge of development' (Gittinger, 1982).

1.3 Contextualising the study

As a result of dramatic political change in South Africa during the early nineties, the structure of institutional agricultural support in the previously independent Bophuthatswana and Western Transvaal region changed substantially. The North West Province was proclaimed during 1994 as part of South Africa's new constitution and includes the Rustenburg, Mafikeng and Vryburg regions. The provincial North West Department of Agriculture, Conservation and Environment (NWDACE), consisting of former public agricultural services and the Agricultural Development Corporation of Bophuthatswana parastatal (Agricor), was initiated. A policy and common vision was gradually developed amongst these entities. Determining effective and efficient agricultural support services, especially to previously disadvantaged farmers, is however a continuing process. To contribute to the process, this research study focuses on the application of a restructured project approach to serve the spectrum of small farmers as well as the organisations and structures that will be required to support these farmers in their agricultural endeavours.

The focus of this study is devising a comprehensive model or instrument for planning and implementing support to the diverse developing agricultural sector in North West, through the project approach, that provides for various farmer types. This model is furthermore based on the observation that the underdeveloped nature of input and output markets serving small-scale farmers necessitates selective public sector interventions for which the project approach remains a viable option.

1.4 Aim and outline of the study:

This study aims to provide systematic and constructive argumentation towards the development of a support strategy for previously disadvantaged farmers in North West, based on the project approach. A thorough analysis of development theory, policy directives, operational experience and an impact assessment of an appropriate case study will culminate in the promotion of a planning and implementation strategy for a productive, sustainable small-scale agricultural sector.

1.4.1 Specific objectives:

The study aims to investigate the stated hypotheses through the achievement of the following specific objectives:

- To investigate agricultural development planning strategies and models, particularly the application of the project approach.
- To develop appropriate design criteria for a project approach, accounting for economic diversity in the developing agricultural sector.

1.4.2 Outline:

The context, background, general problem statement and hypotheses of the study are described in chapter one. Also included are the aim and specific objectives of the study.

In chapter two the theoretical framework of reference for this study is developed. Evidence regarding agricultural development and its role in broad economic development is analysed to highlight certain qualifications and to develop criteria for viable agricultural development models. Especially the extent and significance of economic diversity in rural communities is described, whilst quantification of this diversity is addressed through describing a typological approach. It also includes a critical evaluation of development approaches and policies influencing the agricultural sector of the North West province of the RSA.

In chapter three, the project approach is analysed. Due to the political, institutional system until the early nineties, no broad based, viable small-scale sector could develop in the RSA. Most ruralites use agriculture to supplement other incomes. However, studies show that the previously disadvantaged sector can contribute significantly to agricultural production. Lessons from agricultural development, experience, international and national policy are quantified into concrete project design criteria and key findings are reached regarding the general hypothesis that a project approach still has application. The refined "design criteria", are then incorporated into project design and implementation. To test the validity

of these criteria, a project design, incorporating the proposed criteria is used in the *ex ante* evaluation of a project proposal.

In chapter four a comprehensive framework for analysis is developed, consisting of qualitative and quantitative methods of investigation. An appropriate methodology to analyse the Sheila project data, the hypotheses and the project design criteria is established. Direct impacts are determined, including institutional impact determined through qualitative trend analysis; effectiveness analysis determined through qualitative logical framework analysis; social impact determined quantitatively through a typological survey; as well as quantitative financial and economic analyses. Indirect impacts determined include spillover, linkages and environmental impact. All project impacts are summarised in a qualitative, systemic assessment. Data collection entailed a combination of interviews with groups and individuals, including experts, a structured survey and a comprehensive literature review.

The fifth chapter contextualises the study with a description of the political and economic context of the North West Province of South Africa, with a focus on the project approach as it was employed to support small farmer development.

This leads to the case study in chapter six: The Sheila project, where many of the strategies discussed were practised, is analysed through an *ex post* evaluation of the 24 year-lifespan of the project, relying on various available data sources. The essence of the chapter is the development of a profile of the diverse farming community of Sheila, through a typology analysis. A typology model with potentially wider use is also developed.

In chapter seven a new project is proposed (*ex ante* evaluation) and dealt with, based on a broad consultative process with identified groups, while recognising the lessons from the previous chapters. The hypotheses are tested through an *ex ante* evaluation of the project approach. An analytical framework is completed to describe and illustrate the appropriate strategies to be followed in the development of particular groups, through the application of the project approach.

Chapter eight deals with a final discussion, major findings, conclusions and recommendations regarding the appropriate strategy and the role of the project approach in the North West Province.

CHAPTER TWO: STRATEGIC CONSIDERATIONS: AGRICULTURAL DEVELOPMENT IN SA

2.1 Introduction

Due to dynamic features such as technological innovation and change, food security status, changing markets and population demographics, agriculture is continuously transforming. Therefore farmers constantly have to innovate to remain in the market place (Röling, *et. al.*, 1998). Support strategies and models have to evolve accordingly. An extensive literature review on the evolution of models and philosophies used in agricultural development is therefore warranted. This chapter focuses specifically on South African small farmer development. International information and analysis is also used to provide intellectual and theoretical perspectives. The role of agriculture in economic transformation is analysed and the evolution of agricultural development theory and practice and its influence on the South African policy evolution investigated. The diverse nature of the South African agricultural sector is highlighted and the relevancy of dealing with diversity in development planning stressed. The notion that small-scale farmers have difficulties in competing, either in the local, regional or international market, mainly due to a lack of support systems and inhibitive costs, is also investigated.

2.2 Agriculture's role in economic transformation

2.2.1 International perspective

Throughout the past 50 years, the seminal work of Johnston and Mellor (1961) has guided thinking on the role that agriculture can play in the process of economic development. These authors argued that agricultural transformation is an economic development process by which a predominantly rural and agricultural economy is transformed into a predominantly industrial, service orientated one, with the objective of increased wealth, equity and stability.

Agriculture contributes capital and labour to the broader economy, which supposedly could use it more productively. It further contributes foreign exchange earnings through exports as well as a market for consumer goods, services and industrial goods (i.e. inputs). Many development successes entail agriculturally based transformation, as certain agricultural functions are essential for economic development (Johnstone & Mellor, 1961; Mellor, 1979; Mellor, 1986; Staatz & Eicher, 1990; Mundlak, 1997). Agriculture is therefore fundamental to world economies, also because more than 60% of all people are rural and require rural employment (Staatz & Eicher, 1990; Binswanger, 1994; Mundlak, 1997).

Although economic growth is essential, it is not sufficient to ensure improvement in well-being. Facilitating participation in development is crucial if rural people are to share in the benefits of economic growth (Johnson, 1994). Economic transformation therefore focuses increasingly on Human Capital Development (HCD), broadly defined as expanding choices and the ability to react to change (Mellor, 1986; Timmer, 1988; Eicher & Staatz, 1990; Ngqangweni & Van Rooyen, 1998). Human capital development can be defined as adding value through improved ability to identify and deal with constraints. It is targeted as a cornerstone for sustainable rural development and deals with skill improvement through education, training or experience (Evenson, 1989; Van Zyl & Van Rooyen, 1995).

As HCD is crucial for agricultural growth and development, its neglect would often feature in development failures worldwide. Various studies, also from South Africa, illustrate the economic value of HCD in enabling efficient resource use and productive farming (Eicher, 1988; Evenson, 1989; Van Zyl & Van Rooyen, 1995; Sartorius von Bach, 1996; McCalla, 1999). Low farm earnings and poverty could therefore be explained to a significant extent by low investment in human capital and thus development.

2.2.2 Linking poverty and transformation:

Discussing development would be incomplete without defining poverty. In contrast to development expanding choices, poverty is primarily about lack of choice and inability to take advantage of opportunities (Hayami & Ruttan, 1985; Kirsten, 1997; Shariff, 1998; McCalla, 1999). Poverty is created and perpetuated by closely linked socio-economic processes. Lack or denial of access to resources, unsustainable population growth, drought, war, exploitative markets, weak governance and vague property rights pauperise many communities (Chambers, 1980; Kirsten, 1997; Shariff, 1998). Poor people often lack adequate food, shelter and education. They are vulnerable to health problems, economic dislocation, and natural disasters. They are also often exposed to ill-treatment by state institutions and society (Chambers, 1983; Mellor, 1985; Shariff, 1998; McCalla, 1999).

The empowerment of poor people - by making state and social institutions more responsive to them is the key to reducing poverty. Enhancing security by reducing the risk of events such as disease, economic crises or natural disasters is also crucial (www.worldbank.org/html/extpb/index.htm). The International Fund for Agricultural Development (IFAD) warned during 2001 that a global commitment to cut poverty by 50% by 2015 is bound to fail. This is due to the misconception that poverty in developing areas is urban-based: Three quarters of the world's poor still live in rural areas and depend primarily on agriculture and related activities. Investment and assistance should therefore be focused on agriculture, the basis of survival for the poor. Agriculture, in terms of international development co-operation and domestic resource allocation, must be redressed if poverty targets are to be achieved (Deen, 2001). Predictions are that poverty is increasing, with farmers becoming more resource poor (Hayami, 1985; Eicher, 1992; Delgado, 1998; Shariff, 1998). Throughout history poor labourers having no property rights have been pauperised relative to the property owning class. Effort must therefore be focused on labour demand and

remuneration expansion. Two obvious fronts are agriculture and small industries (Hayami, 1985; Brand *et. al.*, 1992; Van Rooyen, 1997). Agriculture is therefore correctly seen as the engine for broad-based economic growth (McCalla, 1999).

While in per capita terms, the RSA is an upper-middle income country, the majority of its population experience poverty or are vulnerable to it (May, 1998; McDonald & Piesse, 1999). The country is characterised by unequal health and educational services and restricted access to services, especially in rural areas. Income distribution is largely racially distorted and ranks as one of the most unequal in the world. South Africa's income GINI-coefficient has twice (1975 and 1991) been estimated at 0.68, which is of the highest ever recorded. Some 30 to 50% of the rural population have insufficient food and are exposed to a poor diet as a result of low income (Makhura & Kirsten, 1999). More than 40% of the population live below the poverty line (Le Roy *et. al.*, 2000). According to Cousins (1998), up to 70% of rural people have an income of below R300/month, making the majority of ruralites food insecure.

Approximately 70% of SA's poor live in rural areas, and about 70% of ruralites are poor. The rural economy is not sufficiently vibrant to provide them with remunerative or self-employment opportunities. The cost of living for poor rural people is generally higher than for their urban counterparts and they spend relatively more on basic social services such as food, water, shelter, energy, health, education, transport and communication (Van Rooyen, *et. al.*, 2001).

The logical consequences of poverty include a lack of confidence, resulting from the inability to sustain livelihoods. Aggression, mistrust, crime and apathy are other results described by scientists. Rural poverty often is a web in which a lack of assets, little income and food, weakness, isolation and vulnerability to contingencies, all interlock (Adendorff, 1996).

A key option in alleviating poverty is through economic growth. The proverbial engine for rural economic growth and transformation, according to the literature, is agricultural development. However, despite many examples of highly productive agricultural systems and a variety of technologies development progress in SA is limited. It is therefore argued that agriculture in SA has only a limited capacity in addressing poverty. However, this perception does not recognise a crucial avenue of growth; integration between smallholders and the agribusiness supply chain. As stated, the focus of this study is the investigation and subsequent redesign of the project approach, to link production to agribusiness, as vehicle to address poverty and achieve agricultural transformation and growth.

2.2.3 The transformation process:

Agricultural transformation or economic development is a continuing process characterised by a general income increase, a declining share of the labour force in agriculture, and a declining agricultural share in the GDP. Usually government plays a key role in the process, by way of policy setting and active

intervention (Timmer, 1988), but theories regarding economic development and the role of the agricultural sector in this process have changed considerably over the past 50 years.

However, agricultural development forms an integral part of the broader economic development process, a challenge of particular importance in South Africa today. Economic development theory has evolved in terms of how its goals are defined, and through macro-economic factors such as the mechanics of growth, the definition of capital, the relative roles of the state and the market, as well as the nature and interventions of governments. This evolution is presented graphically by Meier en Stiglitz (2001) in figure 2.1.

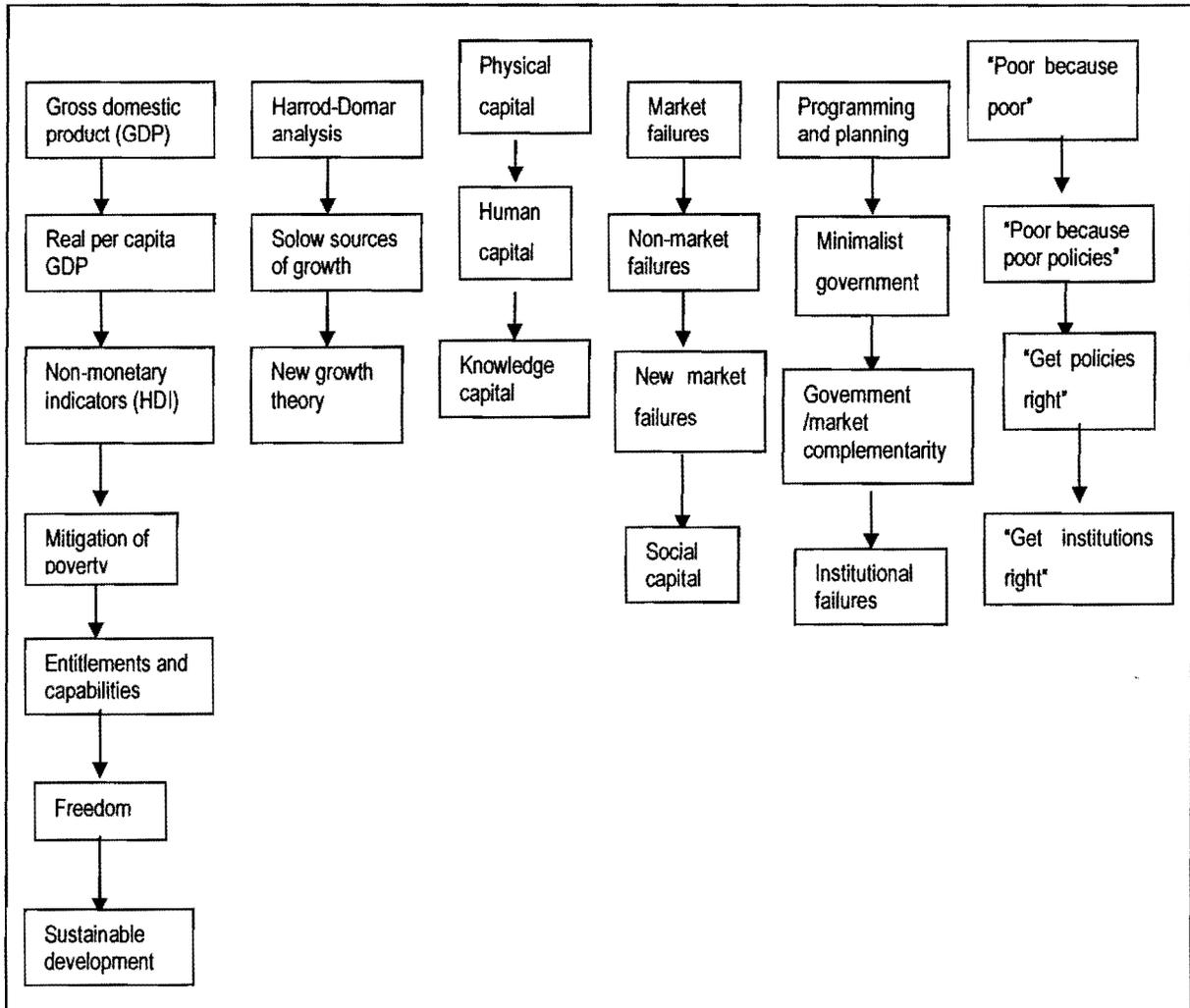


Figure 2.1: The evolution of agricultural development (Meier and Stiglitz, 2001)

While this linear representation summarises the main features of development history, economic development is not a linear process. Adelman (2001) consequently argued that such a representation could lead to the fallacies that 'underdevelopment' has a single cause and that 'progress' in development

can be measured by a single criterion. Still, whilst accepting its shortcomings, this figure does provide a broad description of the main development philosophies of the past 50 years.

Having accepted the complexities of development, what is clear is that economists in general did not appreciate agriculture's role in the broader process of economic development, even though earlier theories partially recognised its importance. Rostow (1960) for example, regarded agriculture as a resource, arguing that agricultural development was a precondition for broader development (as a third of five theoretical stages of development). His growth stage model was one in a long line of similar models, documented since the 19th century. Karl Marx also contributed to this debate, arguing that the 'path of development ran from primitive, over communism, ancient slavery, medieval feudalism, industrial capitalism, to socialism', in a process driven by the forces of conflict between socio-economic classes (Vink & D'Haese, 2002).

Growth stage theories generally regarded development as a process measured in increasing capital income, achieved by replacing activities with low labour productivity (i.e. agriculture) with activities with high labour productivity, in a series of steps. In contrast, structural change models viewed development's path as a more continuous process. Growth was regarded as a 'set of interrelated changes in the economic structure' enhancing the economy's transition from traditional to modern (Vink & D'Haese, 2002). Lewis (1954) described the best known of these theories. In his view the main function of agriculture in the initial development stages was to provide surplus labour and capital to the industrial sector, and to earn foreign exchange. In a latter stage it would provide cheap food to urban workers and a market for produce from the manufacturing sector. He also argued that large estate type farms would be desirable in early development stages, to be followed by large owner-operated farms in latter stages.

Growth stage theories largely neglected the potential contribution of agriculture to development. Decades of theorising followed regarding the manner in which development could be stimulated through the manufacturing sector. Yet the contribution of agriculture could not be ignored for at least three reasons: Firstly, appropriate development strategies are dependent upon the context within which they are implemented. As development is often initiated in rural areas (where most of the poor reside), the agricultural context is relevant. Secondly, the role of the state (willingness, capacity) or the market in structural change is vital. It can be argued convincingly that both the state and the market are weaker in rural areas. The third reason is the multiplier effect of farmers' earnings and those of workers in the food processing industry spent on consumer goods (Vink & D'Haese, 2002).

During the 60s and 70s economic theory was challenged by analysts who hypothesised that the lack of development was a result of ruthless expansion of capitalism (Dos Santos, 1970; Furtado, 1973; Galtung, 1971; Sunkel, 1973). These authors argued that developing countries were made dependent through the international capitalistic system. Unequal exchange with the industrialised world and the repatriation of profits from foreign-owned business made third world growth unsustainable. This view is still held by certain scholars today (Hyden, 1980; Linear, 1985; Wisner, 1989; Isbister, 1991; Brown, 1995) who favour

a more socialistic development approach instead of the capitalistic one used in many developing countries. Although their conclusions are open to interpretation, these scholars made important contributions to the understanding of the relationship between local agriculture and the world economy. They pointed out that the typical under-developed country does not exist, as extensive household and regional diversity is evident. They also stressed a holistic view of the wider economy and stressed the importance of participation, linkages and exchange arrangements within communities. In economic relations between high and low income countries, they highlighted the fact that benefits are not easily distributed equally without political manipulation (Staatz & Eicher, 1990). These scholars' contributions also highlight the importance of recognising diversity and the need for linkages, the basis of this study's hypotheses.

Ashley and Maxwell (2001) also provide a graphic representation of the changing views on rural development (as reproduced in Figure 2.2). In their view the Green revolution in Asia during the 1960s was associated with state investment in the infrastructure required for agriculture as well as in research and extension. Budget priorities shifted towards the social investments required for IRD programmes during the 1970s while the structural adjustment programmes of the 1980s turned attention back to the market as instrument for development. Eventually, the Washington Consensus on food, agriculture and rural development during the 1990s resulted in a more balanced view of the roles of state and market and of investment in productive sectors vs. investment in social sectors (Vink & D'Haese, 2002).

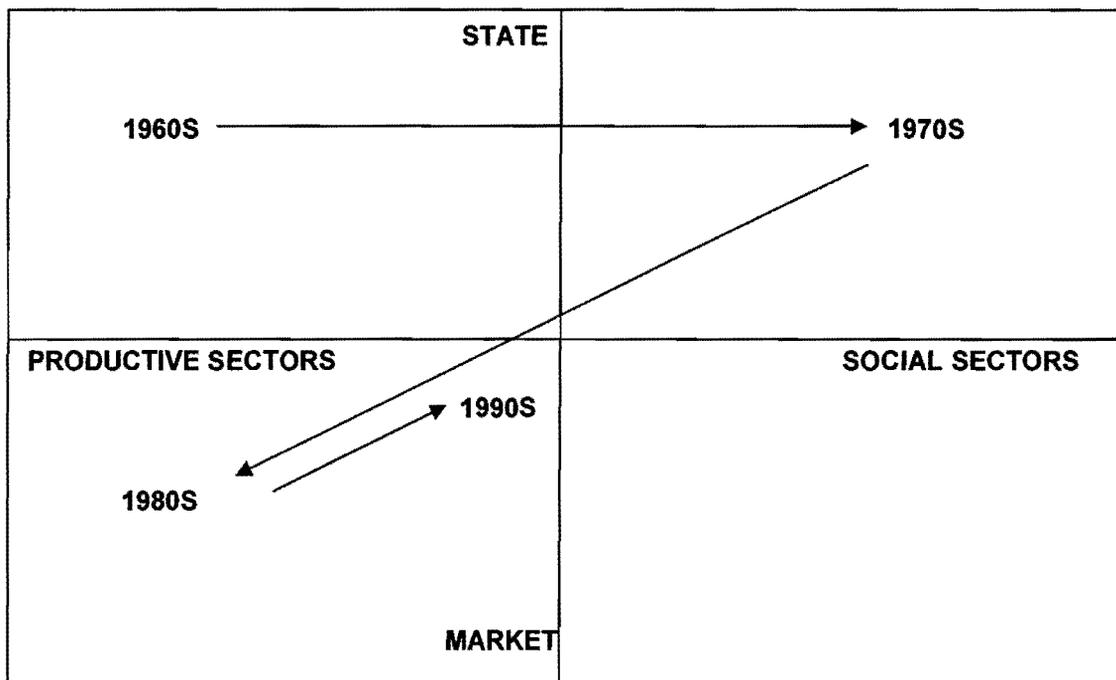


Figure 2.2: The evolution of rural development theory and practice (Ashley and Maxwell, 2001)

Whilst the Ashley and Maxwell model illustrated in Figure 2.2 provides a logical presentation of the theories involved, agriculture's role is in practice not always that clear. These authors cite four reasons why agriculture does not always fulfil its envisaged role:

- 1 Many positive agricultural effects depend on increased small farm production to ensure distribution of benefits and increases in demand for food products:
- 2 World commodity prices have been falling for decades, with no sign of reversal. This undermines the profitability of primary agricultural production.
- 3 Agriculture is extending the limits of the available natural resource base worldwide, placing sustained growth under threat.
- 4 In certain dynamic rural economies, production has been diversified out of agriculture, thus other sectors are playing a role normally associated with agriculture.

Although agriculture's share of output decreases during transformation, the concept of agricultural demand-led industrialisation is widely accepted (Lewis, 1954; Johnston and Mellor, 1961; Mellor, 1979 & 1986; Timmer, 1988; Hayami, 1985; Deen, 2001). This is based on multiplier effects between food supplies, rural purchasing power and labour and capital linkages, typically found in the South African economy (Van Rooyen & Machete, 1991; Eicher, 1999; Vink, 2000; Van Rooyen, *et. al.*, 2001; Poonyth, *et. al.*, 2001). Public rural investment and supportive agricultural policies are therefore required (Deen, 2001).

The transformation of agriculture could be attempted through three strategies (Staatz & Eicher, 1990): The first is the typical free market approach, with limited, if any intervention. This strategy has a high political cost, as it implies limited state support, making it potentially unpopular with a relatively poor electorate. A second strategy is integrated rural development, where government plays a major role in strategic design and programme implementation. This direct approach has high managerial and administrative costs. The third 'price and market' policy approach entails that government intervenes only with regard to the outcome of domestic markets, not through direct intervention, but rather by facilitation. This strategy has high analytical costs, since a continuous study of markets is needed to ensure sound implementation. However, no single approach makes sense for all countries (Staatz & Eicher, 1990), but the three approaches mentioned deal with investment in infrastructure, research and human capital development with different emphasis, depending on the situation. Political objectives are also inevitable and necessary to facilitate transformation. Economic development or transformation therefore requires a diverse focus, from basic input supply to emphasis on the activation of linkages and multipliers.

Ultimately, development strategies must focus on flexible delivery systems and employment as agriculture has a role in economic development and must be stimulated at various levels. Given the wide variety of conditions in South African agriculture, an effective but diverse policy framework to cater for all groupings is required to achieve economic growth and social welfare. This supports the first hypothesis of this study, that diversity must be quantified and dealt with in effective agricultural support. Activation of linkages,

streamlining of marketing and promotion of integrated economic systems, all support the second hypothesis of this study, that integration of stakeholders is required for agricultural growth.

2.2.4 Unique South African development features

Although rural South Africa shares many characteristics with other developing countries, some features and development challenges are unique. The country's demographics reflect its past policies: Many rural people are migrants working and living in urban areas, struggling to maintain rural family and social ties. As a result, the rural-urban continuum takes a particular form: As in many countries, much of South Africa's rural space is sparsely populated. The rural manufacturing base is weak due to poorly developed infrastructure and linkages to markets. Local governments have a small tax base and weak human capacity. Agriculture and other natural resource based activities, although not well supported, provide a basis for many livelihoods (Van Rooyen, *et. al.*, 2001). A unique feature is that most rural livelihoods depend heavily on non-farm incomes and remittances from urban industry and mines (D'Haese, 1995; Wonderchem, 1997; Modiselle, 2001). As a result of urban economic opportunities, the resulting migration patterns and strong tribal and family linkages between urban and rural areas, more capital flows into poor rural areas than in most other developing countries. Movements of people include temporary or permanent labour migration, including weekly and daily commuting and importantly the movement of resources (remittances), commodities (inputs, produce), and services (information) (Van Rooyen, *et. al.*, 2001). Adding a relatively strong social welfare system, the reliance on agriculture to survive is less strong than in other developing countries.

Given the diversity in the agricultural sector, it could be argued that if the South African economy had followed a different development path, rural poverty would not have become such a pervasive feature of rural life (Van Rooyen, *et. al.*, 2001). As discussed, economies generally grow by shifting human and capital resources from agriculture into the industrial sector and subsequently into the services sector. This has also been the case in SA, where the transition to a post-industrial age is in progress. Yet there is compelling evidence that during this process, the primary sectors either failed to achieve their full potential or did so in such a distorted manner that large numbers of people were excluded from the benefits of modernisation. Local commercial agriculture has followed too extensive a capital-intensive growth path while significant agricultural potential lies untapped in the former homeland areas. The growth prospects of African farmers were suppressed, through exclusion from the rural land market, and when commercially viable farming became, by definition, almost impossible in homelands (van Zyl *et. al.*, 2000a).

Recent observations indicate that current support systems for smallholder agriculture in the previous homeland areas are collapsing or have been reduced significantly (Singini and van Rooyen, 1995; D'Haese, 1995; Wonderchem, 1997; Vink, 2000; Modiselle, 2001). Furthermore, the growth path followed in SA has meant that industries related to agriculture (input provision, food processing and fibre) were stunted and urban-based, thus depriving many rural people of economic opportunities. Examples of this

bias included skewed infrastructural provision in favour of white commercial farming areas, and suited only to the needs of a highly controlled policy environment, including the agricultural marketing system. Rural people generally do not have access to productive and appropriate technologies to support their subsistence. Population pressure in these societies has also depleted the natural resource base to such an extent that only a small number of rural households can provide for their subsistence needs from it (Van Rooyen, *et. al.*, 2001).

Whilst the contribution of agriculture to the South African economy is significant, it also has vast potential for stimulating equitable economic growth, if prospects of small farmers could be enhanced. The sector represents 1.28 million jobs (roughly 11% of formal employment opportunities in the country). Presently, more than 12 million people, the majority being poor, are dependent on rural production (DSI, 1999b). Primary agriculture accounts for 4.5% of the gross domestic product (GDP) of SA while the larger agro-food complex accounts for another 9%. The predominantly white commercial sector (roughly 50 000 farmers) exported about R16 billion worth of products during 2000 - nearly 10% of South Africa's total exports. Farms provide livelihoods and housing to \pm 6 million family members. There are also 240 000 small farmers who provide a livelihood to more than a million family members and occasional employment to 500 000 people. Furthermore, an estimated 3 million ruralites in communal areas are to a limited extent agriculturally active. Finally, the productive activities of rural towns are centred on their support to agriculture and related activities, such as agri-tourism and game farming. Roughly 40% of the country's total population is primarily dependent on agriculture and related industries (Anon., 2001b).

Agriculture, including all related economic activities; i.e. input provision, farming and value adding, therefore constitutes an important sector in the economy despite its relatively small direct share of the total GDP. Its contribution is consistently under-appreciated when measured directly as an input to GDP (Nomvete *et. al.*, 1997; Eckert *et. al.*, 1997). Approximately 27% of all industry turnover and 28% of its employment is dependent on agricultural outputs (Anon., 1998a). The consumption of its products constitutes the largest share of private consumption expenditure at 32% (Van Rooyen, Carstens & Nortje, 1996; Van Rooyen, 1998). The significance of agricultural linkages (interactions between economic sectors) and multipliers (through increased employment and income) is illustrated by nine of the top ten employment creating industries in SA being found in the agricultural or agri-business sector. Empirical analysis also shows that agriculture is one of the largest employment multipliers per Rand invested throughout the economy. An investment of R1 million in the agricultural sector creates twice the number of jobs than the manufacturing sector. In the aggregate, agriculture's contributions to job creation, value added and government revenue significantly exceeds those of the non-agricultural sectors (Van Zyl & Vink, 1988; Van Seventer *et. al.*, 1992; Anon., 1998c; Van Zyl & Vink, 1988; Eckert *et. al.*, 1997; Nomvete, *et. al.*, 1997; Van Rooyen & Sigwele, 1998). These insights highlight a contrast with the reductionism developmental approach, which views investment in agricultural services and support systems as inherently in competition with industrial and/or urban investment (Van Rooyen, 1998).

Despite its valuable contribution, agriculture in SA has in general not yet fulfilled its potential as a catalyst for economic development, suggested by international comparisons. Many middle-income countries with similar economic profiles have approximately three times higher agricultural contributions to GDP (Van Rooyen, 1991; Swart, 1996; Lipton *et. al.*, 1996). Comparing the performance of developing countries shows that in 17 of 23 countries where the agricultural rate of growth exceeded three percent, overall GDP growth rates were higher than 5% (Van Rooyen & Machete, 1991). Although inhibitive climatic conditions in the RSA could play a role, the significant impact of adaptive research, technology development and management practices in some highly competitive countries with similar conditions, highlights the importance of support strategies (Low, 1995). The semi-arid resource base of SA is in fact not untypical of comparable countries (Lipton *et. al.*, 1996). High urban unemployment, a large rural population, a largely unskilled labour force and unequal income distribution also indicate that agriculture should play a more important role in the economy. Unless jobs are created in agriculture, the chances of broad-based growth are slim (Van Rooyen, 1991; Swart, 1996; Lipton *et. al.*, 1996).

The impact of the AIDS pandemic although still largely unknown is expected to alter rural demographics in SA significantly. The UN Food and Agriculture Organisation (FAO) in their 2001 annual report, state that recent studies indicate a 50% reduction in agricultural output by African smallholders over the past five years, mainly as a result of AIDS. In SA the pandemic is the number one health problem, threatening rural communities and representing a major development impact. Some authors argue that HIV-AIDS is devastating SA; in 2002, more than 5 million citizens were HIV positive. It is estimated that a quarter of the adult population between ages 20-29, is currently HIV positive. The life expectancy of 68 years is likely to drop to 48 by 2020 (Forgey *et. al.*, 1999). The already affected labour force will suffer further decline: -18% by 2005, -26% by 2020 (see Department of Health, Medical Research Council, and USAID websites). In rural areas, the combination of poverty, migrations from highly infected areas (mines), uncertainty and disempowered women facilitate the transmission of HIV. Illness further increases the risk of becoming impoverished (death, pension loss, job loss, weakened labour force for farming activities, etc.

HIV/AIDS is likely to significantly reduce productivity and earnings as it impacts on wage and remittance earners. Besides losses in investments in education due to death or disability, it is becoming common for children to miss school in order to take care of the ill or to perform household duties. Apart from medical and funeral costs, households are subjected to losses of income and skills, forcing rural households to access savings, sell off assets and incur debts, increasing the vulnerability of survivors (NDA, 2001). Households are increasingly becoming female-headed (Van Rooyen & Nene, 1996), with less access to productive assets (Buvinic & Mehra, 1990; Van der Vyver, *et. al.*, 1992). The rural elderly also increasingly have to shift roles from dependants to providers. The increasing numbers of orphans and children-headed households indicate a failure of extended families and other social safety nets to cope with the demands of the pandemic. HIV/AIDS therefore critically affects the social capital of rural areas (Bos and Leutscher, 1995; Health Systems Trust, 2001). Numbers of economically active people (projections vary from 20 to 50%) therefore will become inactive during the next decade, creating a decrease in average household income. The need for agricultural growth is actually more urgent as a

result of these expectations. Marginal existence, low income and restricted access to resources will characterise many rural areas even more. Agriculture provides a potential for development in these areas through food and fibre production, income and employment linkages (Van Zyl & Vink, 1988). To stimulate rural development through agriculture must be considered a strategy for rural survival and growth.

2.2.5 South African development strategies

Agriculturally related policies of the previous century in SA, entrenched by the 1913 Natives Land Act and various subsequent laws severely inhibited the development of a viable small-scale farming sector (Molatlhwa, 1976; Chikanda & Kirsten, 1998). Support was allocated primarily to the commercial, white sector. For the African sector the primary consideration was demarcation of separate land. Public agricultural support for small-scale farmers was initiated with the well-known 'Tomlinson report'. This report of the commission for the socio-economic development of the Bantu areas within the Union of South Africa was tabled in 1955. Although its major recommendations related to small-scale agriculture were largely ignored by the government of the day (Van Rooyen, 2000), its influence could be seen in many subsequent programmes applied in the homelands (Van Rooyen & Nene, 1996), and in Bophuthatswana since 1972 (Worth, 1994). The report's recommendations represented a first development strategy for small-scale farming in SA. Its series of economic investigations was the most comprehensive factual survey until then and dealt with farming systems and financial results in the resource poor and densely populated homeland-areas.

In its recommendations, aimed at establishing a "middle class" of full-time, economic viable farmers, the 'Tomlinson report' suggested that a comprehensive, integrated farmer support system be implemented to allow small-scale farmers access to increased farmland, markets, financial support and quality extension. These recommendations support the hypothesis that integrating the small-scale sector with stakeholders in the industry is required for agricultural development. However, the focus of the government of the day was on developing the 'homelands' as separate entities, mainly to serve as labour pools for commercial agriculture and industry (Van Rooyen, 2000). The Tomlinson commission recommended a "developmental state" where economic forces would dictate development and growth paths. Because this philosophy did not suit government's policies to promote separate development, most of its recommendations were rejected (Van Rooyen, 2000). Potentially beneficial recommendations were largely reduced to rural land use planning and provision of some infrastructure for small farming units (Bembridge, 1988; Van Rooyen, 1993; Van Rooyen & Nene, 1996).

Ironically, most of the Commission's rejected recommendations are implicitly recognised as crucial today. Despite the completely changed socio-political landscape of South Africa, increased access to land and land tenure reform is still highly relevant. Other recommendations included access to a range of support services to enable economically viable farming; joint ventures and business partnerships; development investment in infrastructure and capacity development. These aspects are currently receiving attention to

stimulate rural development and economic growth (Van Rooyen, 2000). A focus of the Tomlinson report was access to services and joint ventures. This constituted the first indication of integrating services through a project approach. Other recommendations promoted by the report included 'Economic Farming Units' and a 'middle class' farmer group. These were the initiations of a project approach that evolved into the model for development in the homelands during the seventies. The concepts of a 'farming middle class' and 'progressive agriculture', which became the basis for most development actions in Bophuthatswana, also originated from the Tomlinson commission's report. An unpopular recommendation with traditional authorities at the time was a proposal for land allocations, which was directly against the practice where land was allocated as a right and no distinction was made between full and part-time farmers and also non-farm land use (Molatlhwa, 1976). Land allocation was not linked to farming skills.

South African development trends during the 60s relate to the international experience. The focus became technical innovation to improve agricultural practices and provide jobs. A technocratic approach was implemented whereby developing areas (homelands) were targeted for large-scale interventions. These took place under the auspices of 'homeland'-based development agencies, corporations or agricultural parastatal companies. The centrally managed, capital-intensive project approach, also called 'disciplined' farmer settlement or betterment planning, became the mainstay of agricultural development in SA until the late 1980s. It aimed to provide employment in homeland agriculture and increase production. It was argued that expatriate management and modern technology (i.e. Green Revolution techniques) were required to modernise farming. The main objective was to guide selected farmers towards 'full time' commercial producers, through centrally managed support and access to farming resources. The Sheila case study describing the system in detail will be dealt with in chapter six.

In SA, as in other developing countries, many schemes based on the project approach failed. Reasons include inappropriate technology, which farmers often rejected to minimise risk, inadequate infrastructure. A lack of support and political interference also contributed (Bembridge, 1986c; 1988). The project approach is elaborated upon in chapter three.

During the middle 80s and early 90s international focus was on macro policy reform and structural adjustment, food security and employment generation. The complexity and long time frame of development was recognised, facilitating the emergence of realism regarding development expectations. No longer was a 'quick technological fix' viewed as the sole solution. The failure of development approaches through technocratic projects encouraged support for a more participatory approach (Röling, 1988; Chambers, 1993), which in SA provided momentum for an approach introduced by the Development Bank of SA (DBSA) during 1987. This Farmer Support Programme (FSP) was built on the assumption that rural producers act economically rationally if support services are available within a systems context (Van Rooyen, *et. al.*, 1987; Singini & Van Rooyen, 1995). This demand driven approach focused on selected target areas and integrated institutions into a multi-disciplinary support system. Central management was not encouraged, support not exclusively to 'full time' producers and economic farm size *per se* not critical. Where possible participants were screened, but this did not constitute a

participation barrier as the focus was on inclusivity rather than exclusivity. The approach was directed at supporting 'homeland' producers to achieve efficient income through improved access to resources and services (Van Rooyen, *et. al.*, 1987). The FSP elements of support to a selected group, in a systems context and within a multi-disciplinary approach, show similarities with the project approach, although participative procedures were more prominent in the FSP approach (Singini & Van Rooyen, 1995).

The programme contributed to confidence amongst participating farmers and had significant value as investment strategy for promoting economic production, participation and access to a broader range of options (Singini, *et. al.*, 1992; Singini & Van Rooyen, 1995; Adendorff, 1996). Criticism included limited focus on decreasing risk, food security, diversity (recognising different categories of farmers) and sustainability. Although commercialism was an objective, broad-based access to farming services to increase productivity and welfare was the main aim. The appraisal process in FSP projects required a positive cost-benefit position. This should remain an element of future strategies, particularly if the focus on integration (multi-institutional co-operation) and access to support is combined in a revitalised project approach with emphasis on participation.

Participatory Rural Development became the focus of the nineties, also in South Africa (Carruthers & Kydd, 1997; Auerbach, 1998). Importantly, it was recognised that farmers are not homogeneous and that diversity exists in agricultural communities, supporting a hypothesis of this study. Through recognising a range of farming systems and household diversity, farmer groups could be supported more effectively. Integrated Rural Development (IRD) also reappeared recently, geared to address situations where capital, skills and thus employment opportunities outside agriculture are limited. It puts the emphasis on poverty eradication through meeting the basic needs of a rural area, through an increase in agricultural production (Mazambani, 2001).

Co-ordination, linkages and vertical integration, not only of role-players but also of objectives are key aspects of IRD. Similarities to the project approach, as described in the previous section, are found: It is a multi-dimensional process aimed to improve access and rural livelihoods. A typical IRD programme focuses on an area to ensure an integrated, holistic programme. It utilises linkages, partnerships and strengthened institutional capacity as well as community-based institutions (Mazambani, 2001). While a significant benefit of the IRD approach is its recognition of the interdependence of rural activity and the need for a holistic approach, its complexity often renders it unpractical in reality (D'Haese, 1995). However, elements of the approach are useful in a rural development strategy as it argues for a broader view of agriculture within the rural environment.

2.2.6 Policy evolution towards a growing and equitable agriculture:

2.2.6.1 Broad policy framework

Of interest is how the evolution of development philosophy impacted on agricultural strategy, as agriculture is embedded in the broad political and economic scenario. To analyse agriculture, the policy and economic framework within which it operates, must be understood (Eckert, 1991). Policy deals with a statement of direction (Hornby, 1974) and is described as an overall plan embracing the goals and procedures of a government (Webster, 1973). Participation of those involved is beneficial (Ham & Hill, 1993). Three approaches to policymaking can usually be identified, according to Bates (1981). The first deals with maximising social welfare with policy being a set of choices to secure society's best interest. Secondly, policy could be a bargaining outcome from pressure groups, where a lobby process directs policymaking. A third approach is where policy is used to retain political power i.e. where government targets benefits to supporters. If the aim is to maximise social welfare, government is usually more willing to listen to contributions that will positively influence the economy - especially if the issue of equity and distribution of wealth is a real consequence of a proposed policy change (Schmid, 1989). However, policy is sometimes an attempt at solving a political problem. What is economically called bad policy is not always the result of poor training or other deficiencies (Tisdell, 1985; Schmid, 1989), as political costs must be taken into consideration (Bates, 1981). In South Africa, the dramatically changed political framework required new policies. Participatory macro-economic planning took place in SA after 1994 and public policy reform was shaped through a public consultation process (Nomvete, *et. al.*, 1997).

The policymaking process in South Africa is driven by society welfare considerations and the selected economical model for South Africa can be described as socially responsible capitalism, expanding access and equality (Eckert, 1991; Nomvete, *et. al.*, 1997). A major aim is to achieve rapid economic growth, with equity: facilitating improvement in the quality of life, particularly those previously disadvantaged. Major policy initiatives indicate that SA's main economic and social problems, unemployment and poverty, are to be addressed by encouraging a vibrant, rapidly growing economy aimed to narrow the gap between rich and poor (Eckert, 1991; Van Rooyen, *et. al.*, 1994; Nomvete, *et. al.*, 1997). Equality in distribution of growth is addressed through various levels of government intervention. Analysts believe that rapid, equitable growth and poverty decline can be achieved simultaneously (Eckert, 1991; Van Rooyen, *et. al.*, 1994; Nomvete, *et. al.*, 1997).

During the first six years after democratisation (i.e. 1994 to 2000) efforts of the Reconstruction and Development Program (RDP) and the subsequent Growth, Employment and Redistribution Program (GEAR) intended to redress inequalities. The RDP prioritised reduction in poverty and inequality through revival of economic growth, human capital development and ownership to achieve growth with equity. Legislation was passed to alter prohibitive institutional arrangements and discriminatory practices (Van Rooyen, 2001). The GEAR has as premise that job creation addresses poverty, while economic growth is required for employment opportunities. Growth is to be achieved through increased exports and foreign

investment as well as responsible economic policies and social stability (Eckert, 1991; Nomvete *et. al.*, 1997; Swart, 1996). Competitiveness as well as tight fiscal and monetary policy is required. Trade policy was re-orientated towards exports and global markets. This was also influenced by the General Agreement on Tariffs and Trade (GATT), and globalisation, which dominates international trade. The GATT commits signatories, including SA, to replace quantitative import controls with tariffs, to reduce these over time, and to reduce levels of domestic support (Anon., 1994; Swart, 1996).

Globalisation has been proven to benefit developing countries. In analysis of 34 developing and developed countries, growth rates of globalising countries were 30-50% higher than in countries reluctant to globalise. Trade allows optimal resource utilisation through efficient imports, while the consequent loss in employment is usually temporary (www.worldbank.org/html/extpb/index.htm). Since exports have a higher labour: capital ratio to imports, trade reform is expected to enhance employment in SA. Depreciation in South Africa's currency has also aided liberalisation and therefore profitability of tradables (Nomvete, *et. al.*, 1997). Analysts agree that although GEAR contains most requirements to improve competitiveness, privatisation and creating confidence, these need further attention. The labour market, characterised by unemployment, strong unions and relatively high wages, inhibits growth and a more absorbing labour market is required. Government however, argues that a relatively low wage labour market is avoided on strategic grounds, given SA's distorted economic background (Erwin, 1998). However, on the grounds of enhanced trade opportunities, equity and food security, it is argued that SA's agriculture would benefit from the GATT (Anon., 1994; Binswanger, 1994).

Another policy shift has recently taken place: the major theme of the 'State of the nation' address by President Mbeki in 2001 dealt with transformation and a shift from macro considerations to micro applications. This is in tune with international trends (Carruthers & Kydd, 1997). President Mbeki stated that macro-economic balance and stability has been established and that international competitiveness has fundamentally improved. Attention to critical micro-economic issues is required while efficiency, employment, poverty and inequality should be addressed. Lower input costs throughout the economy should be an aim. The President targeted specific sectors for their significant potential to contribute to growth and job creation, including agriculture, tourism and certain export sectors, including agro-processing. Recognising the driving force of technological advances and innovation, investment in research and development is a focal point. The 2001 financial budget speech reiterated the progress with macro-economic stability and fiscal consolidation and announced the next phase of economic reforms: He also stated that the new focus would be on infrastructural and agricultural development and market access. This is developed further in the agricultural sector plan described in 2.2.6.3. On a macro-policy level it can therefore be argued that a facilitating policy environment for economic agricultural development has been created.

2.2.6.2 Agricultural policy directives

A broad professional consensus entails that an agricultural focus is a priority for growth and development in SA. This constitutes an efficient strategy, most likely to reduce poverty (Bembridge, 1988; Binswanger, 1994; Deen, 2000). Whilst substantial evidence exists for effective investment in agriculture (Binswanger, 1994; Pretty, 1995; Lyne, 1996; Anderson, 1996; Swart, 1996), development policy during the nineties did not recognise agriculture as a main engine for growth (Nomvete, *et. al.*, 1997; Van Rooyen. & Esterhuizen, 2001a). The RDP scantily referred to agricultural issues (Van Rooyen, *et. al.*, 1994; LAPC, 1995). However, major policy initiatives did evolve during this period. The White Paper on Agriculture (1995) gave guidelines regarding land distribution, services and infrastructure, broadening of access to services and resources and food security. Food security became a priority as nearly 50% of the population lives below the bread line (Van Zyl & Kirsten, 1992; Anon., 1994). Since the mid-1980s policy shifted from self-sufficiency towards food security, requiring increased purchasing power and food production (Mellor, 1988; Anderson, 1996). Food production increases are predicted, provided that participation of the poor is achieved (Mellor, 1988; Van Rooyen & Sigwele, 1998). Although increased demand is expected, given the impact of recent low growth and the AIDS pandemic, annual increases in food demand of below 2% are expected (Van Rooyen, Ngqangweni & Frost, 1996).

Several agricultural policy reforms to reverse discriminatory legislation and improve participation have taken place, and major deregulation also took place to liberalise the sector during the eighties and nineties. This constituted a 'watershed' in agricultural support and impacted on policy regarding drought relief programmes, credit subsidies, tax breaks, etc. Single channel marketing boards were removed which altered marketing practices comprehensively. The main policy shifts included deregulation of marketing, the abolition of tax concessions, land reform, trade policy reform, and the application of labour legislation to the agricultural sector (Van Rooyen, *et. al.*, 1994; Backeberg, 1996).

Agriculture, with its potential to contribute to growth and job creation, is specifically targeted in the policy shift from macro considerations to micro applications. Infrastructural and agricultural development is to be the focus. The South African economy is today market driven and deregulated, with government intervention in distributing benefits, whilst the prospects for sustained agricultural growth are positive (Vink, 2000). The distinct shift from nationally based economies towards a world economy since the nineties must be recognised as an opportunity. This entails a focus on strategic alliances; supply chain agreements and specialisation. A transition from farm production driven business to embrace a consumer focus is required (Van Rooyen, *et. al.*, 2001). The agricultural sector therefore needs to adapt to function competitively in the global environment.

However, despite the many opportunities in the global market, the global economic market is highly unequal. The sophisticated protective measures of the developed world make it difficult for the SA producer to compete: For every R1 income received by farmers in South Africa, only 4 cents are directly or indirectly subsidised by government. In Canada, the USA and the EU, government subsidy received by

farmers entails 16, 22 and 45% of income respectively (Van Rooyen, Esterhuizen & Doyer, 2001). Trade barriers also negatively affect many developing countries in competing internationally. Agricultural subsidies are the most inhibiting issue for developing countries that rely heavily on commodity exports for much of their gross national incomes. While the developed countries annually spend \$50 billion in development aid, more than \$300 billion is spent in agricultural subsidies by these countries. According to the World Bank, the extent of these subsidies in developed countries roughly equals the gross domestic product of sub-Saharan Africa, constituting a major drain on taxpayer money, whilst supporting over-production (www.worldbank.org/html/extpb/index.htm).

Despite trade barriers new opportunities to enter lucrative export markets do exist if innovative steps are taken. These include differentiated food and fibre products and the exploitation of niche-markets (Van Rooyen, *et. al.*, 2001). Externally manipulated factors, including trade agreements, labour regulations, crime and labour cost, cannot be controlled by individual farmers. However, product quality, production cost, managerial capacity, labour skills and business strategy can be influenced at farm level. Given a long-term decline in raw agricultural commodity prices, stimulating value-added activities could improve livelihoods among the rural poor. Furthermore, improved technologies throughout the production, processing and distribution chain as well as skills transfer, foreign capital and increased export earnings are required (Reardon & Barret, 2000). This could be addressed through innovative co-operation or integration between stakeholders, refocusing on consumer demands, integration and technology development. This emphasises the significance of the second hypothesis of this study; strongly promoting the integration of stakeholders.

Macro-level analyses of the extensive deregulation process shows that the South African agricultural sector as a whole has benefited from globalisation (Vink, 2000). Despite policy reforms unfavourable for the commercial sector, its productivity increased over the past decade as a result of more market-oriented policies (Backeberg, 1996; Anon., 1998c; Vink, 2000; Vink & D'Haese, 2002). Improved flexibility in input substitution is encountered, but less positive; there is a policy-induced bias towards capital-using technology (Vink, 2000; Deen, 2001). Growth throughout the adjustment period was positive due to expanding non-traditional exports. The competitive rating of SA's agriculture has shown a substantial increase since 1992. Established commercial farms invested in new equipment and shifted into more competitive products (Vink, 2000; Vink & D'Haese, 2002). As part of the adjustment, agriculture, like other sectors, did shed labour, thus adding to already high and rising unemployment. That adjustment was accomplished without a fall in aggregate output is a testament to the robustness and dynamism of commercial farming in SA. The rapid deregulation and liberalisation process did however expose the limited capacity of many farmers to adjust. Exposure to international competition caused many to leave the industry (Vink, 2000; NDA, 2001b), but generally the sector's performance has been increasingly competitive since 1992 (Van Rooyen, *et. al.*, 2001; Vink & D'Haese, 2002).

Small-scale producers in particular have trouble adjusting, since they were previously highly dependent on services delivered by parastatals, financed by non-commercial development programs. With the

termination of most development programmes, deteriorating infrastructure (e.g. mechanisation) and poor access to agricultural services became the norm. These producers do not have the financial capacity to absorb additional costs or adopt alternative technology (NDA, 2001b). However, from a strategic viewpoint a competitive emerging farming sector is critical. The plight of the small producer therefore justifies special support programmes for target groups in adapting to the deregulated market (Anon., 1994; Van Rooyen, *et. al.*, 2001; NDA, 2001b). Major rural development lessons learned since democratisation and deregulation underscore the need for integration and co-ordination of agricultural development activities directed at small-scale producers. This evidence forces decision-makers to reconsider the project approach. Especially co-operation and linkage principles continuously resurface (Van Rooyen, *et. al.*, 2001; NDA, 2001b). The project approach as potential support vehicle deals with requirements needed for increasing competitiveness and participation. It focuses on stakeholder integration and cost reduction through co-operative action, facilitating participative planning and implementation.

2.2.6.3 Guidelines for the future: The Strategic Plan for South African Agriculture:

During 2001 agricultural policy reform became a priority, following the President's state of the nation address and his subsequent invitation to Agri-SA, the Agribusiness Chamber and the National African Farmers' Union (NAFU) to partner government (NDA) in drawing up a common agricultural perspective to which all could commit. This led to a comprehensive strategic plan of which the aims include a common vision, a framework to guide policy and implementation, investor confidence, competitiveness and partnerships among public, private and community stakeholders. The strategic objectives entail equitable access and participation in a globally competitive, profitable and sustainable agricultural sector. Priorities include transforming research, technology transfer and human capital development, integrated rural financial services and lower production cost (NDA, 2001b). Government ratified the plan and agricultural entities are currently engaged in adopting it as policy framework in designing strategy.

The core focus is encapsulated in the goal: "To generate equitable access and participation in a globally competitive, profitable and sustainable agricultural sector contributing to a better life for all." The challenge is to improve participation in all facets of the sector and rid it of the entry barriers rooted in its historical dualism. Programmes that will facilitate entry into the sector are required. Essential supporting and enabling strategies, crosscutting to the core strategies, have been identified as good governance, integrated and sustainable rural development, knowledge and innovation, international co-operation and safety and security. These complementary objectives provide the foundation without which the strategic goal of a competitive, inclusive and sustainable agriculture could not be realised. The vision of a united and prosperous agricultural sector requires partnerships. It also requires Government to act with greater speed and urgency and in partnership with farmers, agribusiness, NGOs and within government departments (NDA, 2001b).

Core strategy 1 aims to enhance equitable access and participation to agricultural opportunities and to unlock the entrepreneurial potential in the sector. Its focus will be on land reform, start-up support packages for entrants and partnerships, for which government will establish a framework. All avenues of land access; restitution, redistribution and tenure reform will be given attention. The most important economic determinant of change will not be land reform *per se* but the institutional arrangements supporting the total spectrum of farmers participating in the market (Van Rooyen, 1998). It is in this regard that a redesigned project approach could have a significant impact. As land reform without a comprehensive support system has proven to be unsuccessful (Kraft, 1996; Vink & Coetzee, 1996; Van Rooyen, 1998; Turner, 1998; Van Zyl & Kirsten, 1998; Van Rooyen & Van Zyl, 1998a; Anon., 1998c), the need for an integrated approach is obvious. Through the redesigned project approach, a selection process could be facilitated, needs analysis done, access to inputs, mechanisation, etc., organised and integration into the value chain achieved. Given the inhibitive input cost that faces the small-scale farmer, this appears to be a practical approach to land reform, empowerment and growth.

Core strategy 2 deals with competitiveness, a challenge that must be addressed for survival of many producers in the sector. As discussed in the previous section, agriculture in South Africa has since 1994 increased its competitive advantage and the challenge is to sustain and expand this (Van Rooyen, 2000). The key lies in competitive inputs and application of improved technology. Research and extension are therefore critical. To improve bargaining power, partnerships in the supply chain are important. Here also, the value of integration through a project approach is obvious. In essence, a demand side approach (i.e. removing market access barriers and unfair competition) as well as a supply side approach (i.e. export promotion) is needed (Van Rooyen, *et. al.*, 2001).

Core strategy 3 has as objective farmers' enhanced capacity to use resources in a sustainable manner. The criteria should be protection of the environment with adequate returns through economically viable, ecologically sound, culturally appropriate, socially just practices and efficient management (Torquebiau, 1995; World Commission, 1987; Batie, 1991). To stimulate rural development through agriculture is considered an important strategy for growth (NDA, 2001b), but innovative means must be found to boost harvests, as many current methodologies cause degradation. Some authors state that the survival of the human race will depend on curbing the degrading impact of developing societies (Lopes, 1992b; Aihoon & Kirsten, 1994; Spio, 1997) as the poor exert unsustainable demands on natural resources (World Bank, 1989). There is however a school of thought that claims that the impact of society has been exaggerated (Tapson, 1996; Stocking, 1998; Modiselle, 2001). Still, a sustainable approach is the only alternative, as the danger of sub-optimal resource use and subsequent environmental degradation is serious (Van Rooyen & Sigwele, 1998; Ruttan, 1988). A redesigned project approach has significant potential to facilitate sustainable resource use, as it entails effective participation, co-ordination and management.

The strategic plan for agriculture to enhance participation, competitiveness and environmental integrity will guide agricultural development for a considerable period. It will require concerted effort. Especially co-ordination, capacity building, planning and sequencing of implementation and monitoring is crucial.

Detailed action plans are to be developed through co-operation. Various stakeholders are involved in forums where the process is to be defined, programmes implemented and progress monitored. The principles of stakeholder integration, a thread throughout the strategy, should lead to initiatives based on the project approach. The principles identified throughout this study could contribute to this process.

2.2.7. Conclusions

Empirical evidence illustrates that no single theory of causation can account for economic development, with its complexities. This contributes to agriculture's contribution not always being recognised in evolving development policies. However, structural transformation requires sustained agricultural growth. For South Africa, an effective but diverse policy framework to cater for all groups is therefore required to achieve growth and social welfare. The country's development profile is unique in that rural livelihoods – depend substantially on non-farm incomes and remittances, influencing agricultural activity extensively. Although agriculture has a significant economic role, AIDS is impacting on rural communities, altering production and income patterns. Whilst agriculture has not fulfilled its potential as a catalyst for economic growth, the AIDS pandemic adds urgency to its necessity.

South African policy aims to achieve rapid economic growth with equity, whilst recent policy initiatives aim to stimulate agriculture's crucial role. Whilst overall economic growth does not inevitably lead to improvement in living conditions, it is a condition. A growing economy is required, but not sufficient. The constraints and inequities faced by small producers in adjusting to the competitive global market are recognised. Addressing access to services and resources is therefore a policy priority, leading to a redirection in budget allocation, also regarding research and human capital development. The private sector has a role to play in facilitating this empowerment. Today, the Tomlinson commission's report, that suggested comprehensive support to facilitate small-scale farmers' access, must be acknowledged. Especially relevant is the focus on linkages and access to services. Integrating services through a project approach constitutes an important growth strategy as its systemic, integrated nature could facilitate development. Through the revived project approach, selection, needs analysis, access to inputs, etc., could be organised and integration into the production chain could be facilitated.

Economic development is a multi-dimensional process, encompassing improved services, enhanced opportunities and social cohesion. The concept emphasises change in environments to enable poor people to improve their livelihoods. The argument of this study is that the project approach has a key role in this process. Clarifying its role, particularly in view of the required interventions inherent in the strategic plan for agriculture, is crucial. Services integration recognised during the fifties, recognition of diversity and linkages during the sixties, equity during the seventies and participation during the eighties all entail crucial aspects that could be facilitated in a redesigned project approach. Integrated, co-ordinated support to small-scale producers is inherent in the approach, with the aim to lower cost. How diversity can be dealt with, and how it relates to the project approach promoted in this study, deserves further analysis and is the focus of the following section.

2.4 Rural development: dealing with diversity

2.4.1 Introduction

Since democratisation during the early 1990s, decision-makers in South Africa are re-orientating agricultural services towards those previously excluded by the political dispensation. This process is constrained by a lack of quality information about the client (Carney & Van Rooyen, 1996), illustrated by the general misconception of coherent rural communities, households and farmer groups. The reality is a highly diverse and disrupted rural society (Perret, 2001; Van Rooyen, *et. al.*, 2001). Contributing to this diverse rural setting is a history of colonialism, apartheid, cultural diversity and aspects such as economic deregulation, urbanisation, etc. (Laurent, *et. al.*, 1999; Modiselle, 2001; Perret, Kirsten & Van Rooyen, 2001; Perret, 2001).

Resource poor farmers differ significantly in approach, as a result of differences in access to services and resources. While macro level diversity in an area is often acknowledged through agro-ecological zones, administrative districts, production areas, etc., micro-level diversity due to highly skewed economic status in a community is relatively much higher and is not recognised. Socio-economic diversity should be taken into account, in particular the manner in which farmers' access resources, and the manner in which they operate their farming systems (Laurent, *et. al.*, 1999). Forces such as migration, cultural and political change, etc., exacerbate diversity. Rural stratification in developing areas is in fact increasing and diverse policies, technology packages and institutional innovations are needed for different farmer types (Eicher, 1988; Stevens & Jabara, 1988; Laurent, *et. al.*, 1999).

This study therefore hypothesises that quantifying the existing rural diversity is a crucial element of development currently not adequately recognised and dealt with. The hypothesis deliberately contradicts the Taylorist principle that there is 'one best way', applicable for all types of farmers. In fact, a scientific description of relative homogeneous focus groups to facilitate focused and appropriate support should have a role in development. In this section, an in-depth investigation into this key issue is attempted through a close examination of this hypothesis.

2.4.2 Rural reality: A role of small-scale agriculture?

Farming in South Africa is often described as the production of the approximately 50 000 large commercial and mainly white-owned farms with strong linkages to industry and export markets. This sector does account for 90% of production and occupies about 88% of agricultural land (Anon., 1997), but is to a large extent the result of a century of policy-induced distortions (Van Rooyen, 1990). Evidence indicating that various policies destroyed small-scale farming from a once dynamic, market responsive and competitive sector can be cited (Bundy, 1979; Van Onselen, 1996; Van Zyl & Kirsten, 1998). In the latter part of the nineteenth century, African farmers supplied mining towns in the interior as well as towns in Natal with

grain, while also 'exporting' to Cape Town. African tenants farmed large areas, including white-owned land, through sharecropping (Bundy, 1979; Van Onselen, 1996).

Viable small-scale farming was subsequently drastically inhibited with the segregation laws of 1911, 1913 and 1932, which effectively eliminated small-scale competition from the market. Extensive government support for white farmers during the next 60 years facilitated increased national output, creating food self-sufficiency, but decreasing food security for the black population. During the late 1980s budget allocations to commercial agriculture averaged 67% of the total agricultural budget, compared to 33% for all homelands combined. This translated into highly inequitable support systems in transport and communication links, training, water, input distribution, research, extension and financial services (Chikanda & Kirsten, 1998).

Small-scale farming today entails enterprises constrained by limits to the quality, quantity or accessibility of one or more key inputs, and is practised mainly by black farmers (Lipton *et. al.*, 1996). These farmers usually operate at low output levels and have to deal with insecure land rights, non-viable farm units, lack of support and restricted opportunity to compete in agricultural markets (Van Rooyen, 1993; Perret, *et. al.*, 2001). Available input technology often fails to match their constraints, environment and management abilities. Although the political situation has changed drastically, the gap between white and black producers is slow in closing and no significant improvement in rural livelihoods is evident. Much of the commercially successful technology is also of limited relevancy to smaller farmers (Low, 1995). Because of the limitations, agriculture is often a last resort, also because remuneration in non-agricultural activities is higher than returns from agriculture (Eckert, 1996).

Small-scale farming in Southern Africa often fulfils a supplemental role. A common finding is that most ruralites (75-85%) use agriculture minimally to supplement larger, more stable income sources from elsewhere (Low, 1986; Bembridge, 1988b; Van Zyl, 1991; Panin *et. al.*, 1993; Eckert & Williams, 1995; De Klerk, 1996; Kirsten, 1997; Van Zyl & Kirsten, 1998). Only 15- 24% of rural households generate their own food requirements. Marketing is highly concentrated with a small minority of households accounting for more than 80% of the developing sector's sales (Van Rooyen & Van Zyl, 1998). Very few households have only one breadwinner and even then, more than one income source exists (Stilwell, 1985; Levin, 1994; Eckert & Williams, 1995; Eckert, 1996; Laurent, *et. al.*, 1999). However, agriculture plays a major role in the survival of many poor rural households as a fall back option when fixed employment opportunities are scarce and as such has economic significance, not to be condemned without acceptable alternative (Van Zyl, 1991). Agriculture therefore has a key role in economic development of SA, according to various authors (Swart, 1996; Lipton *et. al.*, 1996; Nomvete *et. al.*, 1997; Eckert *et. al.*, 1997; Van Rooyen, 1998; Anon., 2001b). However, four aspects in particular are determining factors. These are the natural resource base; trade patterns for agricultural products; the potential role of small-scale agriculture; and opportunities in the non-farm rural economy (Vink & D'Haese, 2002).

Linked to this argument is the one constant in the literature on the role of agriculture in economic development, namely the notion of the superior efficiency of small farms, which goes back to the 'poor but efficient' hypothesis of Theodore Schultz (1964). This superiority supposedly rests on the following grounds (Ashley and Maxwell, 2001):

Small farmers make efficient decisions

Small farmers use labour intensively, avoiding the cost of managing hired labour

Small farmers tend to utilise land located in areas that mitigate against mechanisation

Efficient labour use and marginal resources cause small farmers to maximise returns to land

Small farmers innovate successfully because most new technology is scale-neutral and not more risky than traditional technology – both in purchasing and in application

They can participate efficiently in marketing chains, individually or as groups (co-operatives)

They cause less environmental damage than larger operations

They spend more of incremental income on locally produced goods and services, thus maximising growth linkages.

However, as much as there are some areas in the RSA where ruralites conform to this model and where food production contributes to the local economy, there are as many that do not conform to this stereotype (Ashley and Maxwell, 2001). A combination of the following reasons could be put forward:

Land is not the critical scarce resource, but capital or labour is

Part time farmers (the common type) may not see the need to maximise returns from farming

Small farmers are more likely to grow low value staples for self-sufficiency

New technology reflects commercial needs, often with limitations for small farmers

The skills required to manage new technologies are beyond the scope of many small farmers

Product differentiation required for specific markets, impose quality and timeline requirements difficult for small farmers to meet

Large farming operations handle chemicals more carefully and efficiently and are more likely to use new, resource saving technologies.

These reasons represent a set of assumptions, not all of which are necessarily valid in a particular small-scale situation. The same is true regarding the first set of assumptions introduced by Schultz (1964) as quoted by Ashley and Maxwell (2001). The extensive diversity in the agricultural scene of South Africa makes generalisation difficult, dangerous and inherently unscientific. The extent to which agriculture impacts on economic development therefore depends on the potential of the resource and that of the farmer. The farmer's ability to manage declining commodity prices and his efficiency are crucial (Vink & D'Haese, 2002). According to Dr. Van Rooyen of the Agribusiness Chamber there are very specific conditions under which small-scale agriculture can be profitable and wealth generating (personal communication; 2002). These conditions will be further investigated in this study.

Consequently, there is indeed potential for small-scale agriculture, but this will not be a spontaneous process and must be driven by sound policies and support strategies. In some areas, for some farmers, agriculture might be a viable strategy whilst in others it might not. The challenge therefore is to identify farmer groups that could contribute to economic development and to develop appropriate approaches for these. Concurrently, appropriate support strategies for groups not commercially inclined (i.e. on food security), should be devised.

Given the extensive documentation on the supplemental role of agriculture for most ruralites, realism does not suggest a nation of small farmers (Eckert, 1991), but the identification and support of defined beneficiary groups in specific areas. Scientific analysis proves that market forces and opportunities do influence productivity in the developing sector: expert opinion concurs that with sound support and investment, it can contribute to agricultural production in SA (Bembridge, 1986; Binswanger, 1994; Singini & Van Rooyen, 1995; Brand, 1996; Lipton *et. al.*, 1996; Van Zyl, 1998). But, there are undoubtedly obstacles (Lipton *et. al.*, 1996). Entrenched institutional, resource and skill differences between the commercial and emerging sectors are vast. Still, small-scale agriculture has a vital role to play in transformation and economic development (Van Rooyen, *et. al.*, 1994; Nomvete, *et. al.*, 1997), provided that support systems take cognisance of the need for a group specific focus, human capital development and lowering input costs. Integrating stakeholders and facilitating access for farmer groups through the project approach, again appears a logical direction for development.

2.4.3 Quantifying diversity:

It has been established that most rural households have diverse incomes, in which pensions and remittances play a dominant role. This pattern is illustrated by various descriptive and typology studies (Eckert, 1991; Lipton, *et. al.*, 1996; Bembridge, 1988b; Van Zyl, 1991; May, 1996; Van Zyl & Kirsten, 1998; Van Rooyen & Van Zyl, 1998; Manona, 1998; Makhura & Kirsten, 1999; DSI, 1999a; Le Roy *et. al.*, 2000; Perret, *et. al.*, 2001). Despite its increasing scarcity, off-farm employment is the preferred labour allocation in rural areas and full-time farming is not the objective of most households. The high migration rate of young, skilled people, leaves agriculture reliant on the labour power of old people, many of whom are illiterate, have low work capacity and limited technical skills (Chikanda & Kirsten, 1998). Diversity in rural settings clearly manifests itself in the different types of farming systems, in the different livelihood systems (Ellis, 1993), and then in the variety of responses to development actions (Capillon, 1986), which one can observe amongst rural households with a common economic and natural environment.

To illustrate, a few examples are described: In Melani, a typical former homeland village in the Eastern Cape, the influx of people from so-called white areas during the sixties and seventies, as a result of apartheid policies, has caused the virtual collapse of agriculture. Currently unemployment is at 41%, with 29% of the inhabitants having formal and informal jobs. Roughly 73% obtain income from elsewhere and 70% of households do not have access to agricultural land (Manona, 1998; Wyngaard, 1998). In a typical

rural Limpopo province community, up to 33% of household income is generally obtained from remittances and 16.4% from wages. Other non-farm activities provide 24.5%, cropping 5.8% and livestock only 1.5% of household income. Pensions, transfers and other sources comprise 18.7% (Kirsten, 1997). In the erstwhile Venda, 69% of the income of participants in a study was from non-agricultural activities. On average, households spent 38% of their R1540 monthly budget on food (Le Roy *et. al.*, 2000). In Kwazulu-Natal agricultural income was found to average 6.1%, but for households with access to land, the percentage rose to 14.6%. Four broad livelihood-generating activities were identified; wage labour, commodity production, welfare and pension transfers and remittances (May, 1996).

Ardington & Lund (1996) found that households that obtained some income from agriculture comprised 37% of the total population of SA. Overall, 34% of rural income is derived from wages, 22.1% from remittances, 22.4% from transfers and 6.1% from agriculture. Categorising households according to a 'main source' of income, when the majority rely on multiple sources, therefore paints an incomplete, misleading picture of the rural economy (Ardington & Lund, 1996). Rural households clearly combine resources in various ways to enable them to maintain a livelihood. Farming income contributes far less than non-farm income to total income in most rural areas (Makhura & Kirsten, 1999). A Directorate Statistical Information (DSI) survey (1999a) confirmed that most agricultural activities are undertaken for subsistence purposes: Only 18% of almost a million households with livestock were involved in selling stock. While nearly 1.2 million households grew produce, only 3% sold it. The greater majority grew maize for sustenance purposes. From a variety of these descriptive studies, a broad profile of the resource poor agricultural sector can be derived. A fair assumption, based on these studies is that roughly 20% of the 11 million black rural people of South Africa are to an extent interested in agriculture. With an average size of six members per household, this entails 2 million rural households. The 20% interested in agriculture would then entail 400 000 households. It can further be assumed on this premise, that for roughly a tenth of these the objective is commercial production.

Due to the diversity of farming situations, technical messages developed by research often reach only a limited number of farmers. This is the result of technologies not being adapted to the social-economic conditions or objectives of the farmers concerned. The following statement summarises the issue: "All assistance to farmers should be based on knowledge of the local situation, and a willingness to respect local customs. Although, not inviolable, these customs have to be understood, and, before considering changing them, one should consider whether their legitimacy has not been overlooked." (Gourou Pierre, 1992: *Terre de bonne espérance*, ICRA course module).

Simply describing the agricultural sector in South Africa as dualistic, consisting of 'two agricultures' with a commercial and developing sector (Lipton, *et. al.*, 1996) is therefore not factually correct. Extensive diversity, with highly commercial farmers at one end of the continuum to ruralites with a minor supplementary enterprise on the other end, is evident (Singini & Van Rooyen, 1995). Small-scale farmers are less commodity-based, making them heterogeneous by nature (Francis, 1999). This led development specialists at a DBSA conference during 1995 to conclude that an inadequate framework of producer

categories exists. A rigorous set of categories of rural households is required for defining support programmes' targets. A methodology based on beneficiary categories, as a way of adding value to agricultural activity would have significant benefits (Singini & Van Rooyen, 1995). Differences between farmers are quantitative and qualitative, as supported by a range of empirical studies, highlighting the danger related to blanket recommendations (Laurent, *et. al.*, 1999).

In dealing with the hypothesis of addressing diversity, an important conclusion at this stage is that a technical optimum applicable to all agricultural situations, even in a homogeneous natural environment, is a fallacy. Given the evidence discussed, such a single technical solution, applicable for all farmers in an area, is also increasingly questioned in social analysis and economic development theory. Accounting for diversity within rural communities and agricultural schemes is required in order to deal with technical change and innovation in an effective, responsible manner (Laurent, *et. al.*, 1999). Various technological and institutional arrangements as well as group-specific strategies are required for sound economic development (Eicher, 1988; Coetzee, Kirsten & Van Zyl, 1993; Low, 1986b; Eckert & Williams; 1995). Practical categorisation of farmers should be part of effective support, to establish recommendation domains for farmers with similar circumstances, practices and opportunities. Limited resources could then be allocated optimally, resulting in appropriate solutions with enhanced adoption (Low, 1986b; Eckert & Williams; 1995), as facilitated by a clear vision of the client base (Eckert, 1996). The failure of developmental policy to take into account variation frequently results in a waste of resources and unintended side effects (Perret, *et. al.*, 2001). Recent policy initiatives stress farmer focused planning and strategies, if farmers are to be served efficiently (NDA, 2001b). To give this practical content within a social, economic and political context is a challenge in which describing rural diversity is crucial (Laurent, *et. al.*, 1999), as diagnosis and description is a prerequisite to any sound development programme (Perret, 1999).

2.4.4 Application of the typological approach:

Diversity, inherent in agricultural development, can be viewed as a manifestation of the capacity of the agricultural system to adapt and sustain different situations. Using typologies affirms differences in economic size (capital, land, and labour) as a source of inequality and rejects the Taylorist principle that there is 'one best way' (Laurent, *et. al.*, 1999). Progress in technical knowledge does not necessarily imply economic growth *per se*. The analyses of economic and sociological mechanisms that influence development are crucial in establishing sound recommendations for intervention (Laurent, *et. al.*, 1999). Although typologies do not determine the target groups and priorities, they contribute by specifying what (and who) are at stake in development choices (Laurent, *et. al.*, 1999).

Having accepted that no 'one best' technological approach exists, the aim is a framework that facilitates the identification of aspects that need to be quantified and compared. Farmers are active in a system of social relationships, influencing production choices whilst production means are unevenly distributed. A

typological approach constitutes a model aiming to represent the structure and function of a particular farming system. It facilitates understanding of farmers' choices and the production obtained. Through "stratifying the observed reality", a typology helps us to categorise farmer 'types' according to similarities in development constraints or social relations. A typology is therefore constructed to elucidate the agricultural reality of an area and devise appropriate solutions. Different farmers are quantified so as to identify target groups. A typology also provides data for the formulation of agricultural development policies, for predicting the impact of such policies, and for the choice of indicators of agricultural transformation (Laurent, *et. al.*, 1999; Perret, 1999).

The use of typologies has a long lineage in sociological analysis. Typologies have been used in rural sociology primarily to distinguish the social and economic characteristics of farming. Typological approaches depart from strict economic analysis and social participatory approaches, which often overlook diversity. It combines the respective principles and advantages of both approaches (Perret, *et. al.*, 2001). In recent works on agricultural systems (Perrot & Landais, 1993; Landais, 1998), the term *typology* designates both (i) the procedure that leads to building-up household types, and (ii) the system of types itself resulting from this procedure. This constitutes a clear shift from a positivist approach of farm classifications that involves mere grouping of morphological features. The typology approach refers directly to a constructivist paradigm, which rests upon the identification of coherent patterns. It strives to be exhaustive and integrative rather than sectoral (Perret, *et. al.*, 2001). Typology analysis is a multi-dimensional classification based on relations of contiguity or similarity: it groups and analyses according to main modes of operation and characteristics (Perret, 1999). Typologies seek to constitute a range of types that simplify reality whilst accounting for the main particularities that allow each type to be classified and analysed (Perrot & Landais, 1993). Ideally, a typology should include a number of types, each differing significantly from the others in terms of certain major criteria. Being able to identify within each type the practices that yield the best technical and economic performances would provide a common reference to be shared with similar farmers, extension and research (Laurent, *et. al.*, 1999).

There are commonalities between a typological survey and qualitative surveys based on Participatory Learning and Action (PLA) principles. Among "in-depth" (quantitative) surveys, typological methods are peculiar, as they use principles from qualitative survey techniques. For instance, the researchers themselves carry out the interviews, the interview questionnaires tend to focus on the main issues farmers have to cope with, etc. Typological works are generally clearly demand-driven, and tend to be operational. While both PLA and typological approaches 'borrow' from anthropological survey techniques in being relatively quick, typologies are not just models but a true representation of reality. Anthropological survey techniques such as PLA attempt to give an idea of this reality according to actors' viewpoints (Chambers, 1994). A typology, as a grouping exercise, is a quantitative multi-variable analysis; with at least 3-4 essential variables used for a clear discrimination of types. In contrast, standard quantitative analysis and the use of average data allow representation and synthesis that often disguise reality (Perret, 2002).

Farm typologies were first applied in intensive production contexts, for diagnosis and technical change purposes (Capillon, 1986; Perrot & Landais, 1993; Landais, 1998), but were extended to a rural development context (Laurent & Centres, 1990; Laurent *et. al.*, 1999; Perret, 1999). Within the framework of rural development, designing a typology will imply grouping and describing households with similar needs, with regards to the project's objectives. Typology schemes represent formalisations of the complexity of the rural world at local level. Typological techniques are ideally used during the preparatory stage of a project, assessing its impact on different farmer types. It has an important role in developing farm management recommendations, technical advice and technology adaptation. Through a typology, group representation within a local organisation can be facilitated. Interest groups and for instance, the most vulnerable groups, could be identified. Further modelling and scenario testing activities can follow. Data highlighted with a typology can also be used as indicators of project impact (Perret, 2002).

As an example a farm typology was established for hundreds of farms distributed along a transect in the Kilimanjaro area. It was based upon four major criteria: Land; farm income; labour; and cattle characteristics. Several possible criteria were not used, as they were not discriminative. The typology was inclusive of all possible farms and each type showed a great homogeneity. It described the way the region operated economically, confirmed the importance of the production systems and served as a tool for further development. It had a cognitive function to provide a representation of existing systems and to identify target groups. It also had a predictive function in anticipating the way an innovation proposal would be received. Therefore, it contributed to decision-making in project management, isolated limitations of the programme and identified constraints for each type. This accurate typology resulted from continuous interaction between farmers, researchers and regional support services. Its methodological requirements were less stringent than in the case of a *priori* approach and it provided a remarkable training basis for all concerned. Its implementation provided guidelines for initiating specific development operations as well as for re-focusing the total project. In this respect, it provided a real and valuable tool for agricultural policy (Laurent & Centres, 1990).

2.4.5 South African categorisation efforts:

A number of classification systems have previously been developed for South Africa. More recent typology studies aimed to describe this diversity in order to propose more "target orientated" and appropriate support. Results indicate that farmer classification has high potential application in South African development (i.e. D'Haese, 1995; Wonderchem, 1997; Laurent *et. al.*, 1999; Modiselle 2001; Perret, *et. al.*, 2001). The simplest and most common classification specifies a dual agrarian structure for SA, composed of about 50 000 large scale commercial farmers and roughly a million small scale farmers, the majority of which do not even produce their own subsistence requirements (Bembridge, 1988; Eckert, 1996). Subsequently, a classic categorisation by Bembridge (1988) has the small-scale sector subdivided into four groups, in terms of economic differences, resources, etc. The first group are the resource poor non-landholders, with no access to land or large stock, comprising roughly a third of the rural population.

The next group entails small-scale landholders with below subsistence production levels who usually sell no produce and comprise more than half the rural population. Progressive small-scale landholders, comprising roughly 10 to 15 % of the population, adapt some technology and sell some produce, but do not necessarily produce enough for household needs. This group includes many traditional project farmers. Market oriented farmers who are making a living from farming form the fourth group and this group comprises less than one percent of the rural population.

Eicher (1988) postulated that four main types of farmers exist in Africa. The first group comprises the resource poor; usually net buyers of food, selling their labour to other farmers, involved in many non-farm activities to generate extra income. This type is common in South Africa, including the North West Province. The second group comprises small holders and herders who rely to a large extent on family labour with limited non-farm activities. This group is smaller than the previous one. Communal livestock farmers in SA have these characteristics, although they usually also have other sources of income. The third group, according to Eicher (1988), are the "progressive" farmers who own and operate their farms, often use hired labour, own implements and market some surplus. The more successful project farmers in the former homelands fall into this category. The last group constitutes large-scale farmers with political power, often involved in business. This most progressive resource poor group is also evident locally and is often involved in share cropping, where land of other landowners is utilised at an agreed price.

The division between subsistence and more commercially orientated farmers in the erstwhile Bophuthatswana was complex (Worth, 1994). Agricultural development in this homeland focused on increased productivity through the introduction of technology. The majority of farmers were unsuccessful in adopting these technologies (Reimer, 1987; Stacey, 1992). Agricultural development has been applied to all willing participants, irrespective of their status on the subsistence-commercial continuum (Worth, 1994). Karodia (1994) subsequently attempted a categorisation of ruralites in the newly established North West Province. He described two main groups; dwellers forming 20% and producers making up the rest of the rural population. Three types of producers were identified; firstly the sub-subsistence farmers who produced very little and where at least one household member was likely to be a migrant. No specialised economic activity other than wage labour existed, and farming is mostly the responsibility of woman and children. This group was estimated to constitute 60% of the rural population. The next group; emerging farmers, constituted households with some livestock and land, and a measure of specialisation. This group makes up approximately 20% of the population. The final group comprises those efficiently producing and generating income. This group can, in turn, be sub-divided into two distinct groupings. Subgroup one are self sufficient, likely ageing farmers, constituting approximately 1% of the population where commercial expansion is inhibited by lack of resources. The other sub-group; commercial farmers, have relatively larger holdings and the breadwinner is a full time commercial farmer. This group makes up 2.5% of the rural population.

According to Eckert (1996), four resource measures can be combined in a classification of SA's rural dwellers. These are access to capital, labour, off-farm income and farming skills. These criteria to a large

extent determine the type of farming practised. The availability of access to capital can for instance vary from severe capital constraints with no available off-farm income, to moderate capital constraints and access to off-farm income from remittances. A small, poor, female-headed household will obviously have severe labour constraints in relation to a bigger family with available family members and off-farm income for hired help. A continuum of possible scenarios exists. Where moderate capital and labour constraints occur and a relatively high level of farming skills exists, high potential emerging farms can be expected, particularly if off-farm activities are limited. A combination of severe capital, labour and skills constraints will probably result in supplemental farming.

May (1996) described seven rural groups. The first group being marginalised households with no access to wages, remittances or transfers, forming roughly 5% of the population. Agriculture provides 80% of household income. The second group comprise welfare dependent households that form 12.5 % of the rural population, with 95% of income from state transfers and less than 5% of income from agriculture. For a quarter of the rural population, remittances form almost 70% of household income. For this third group agriculture provides 6% of income. Households in the fourth group primarily depend on wages and form 42.5% of the rural population, with more than 70% of income coming from wages. Less than 4% of income is generated by agriculture. Group five has various income sources and comprises 13.5 % of households. Welfare contributes 23% to income and agriculture 4%. So-called entrepreneurs, group six, form 1.5% of the rural population. Agriculture's contribution to income is 18%, with 5.5% from welfare payments and one percent from remittances. Group seven is the group of commercial farmers (less than 1% of the rural population) who obtain agricultural income.

Farmer categorisation and the need to focus on potentially good farmers are however not new concepts. An Agricolor document (The farmer question; Nicholson, CA, 1989) refers: The author argued that human potential and motivation should be a determining factor in developing support, to enhance efficient usage of resources. An understanding of the motivation of the client must be facilitated. The author established that certain characteristics identify successful farmers. These are usually literate, use extension services, have contact with commercial farmers and are less traditionally inclined. They express entrepreneurial aspirations, operate larger holdings, want land ownership, employ labour, have other income sources and accept personal responsibility. These findings are supported by similar work done by Bembridge (1986b) and also international research by McClelland (1961) and Durand (1975). More recent work (D'Haese, 1995; Wonderchem, 1997; Laurent *et. al.*, 1999; Modiselle 2001; Perret, *et. al.*, 2001), however, describes a comprehensive livelihood analysis to facilitate agricultural development in a wider (rural) context.

During 1997, the concept of a 'rural typology' was introduced into agricultural economic analysis in South Africa. In a study done in the central Eastern Cape, a typology of rural households with seven types was developed. The largest type (57.2%) consisted of households depending on welfare and remittances. A type whose main source of income is farming comprised 18.6%. Another type comprising 7.2% earned income from non-farming activities, while 5.7% of households were described as 'moneyless'. A 'landless household type' comprised 5.2% while 1.5% had access to land, but did not farm. The large majority

(70%) viewed farming as a supplementary activity and less than 10% were not involved in farming. Only approximately 20% farmed to earn cash income (Laurent *et. al.*, 1999). Other studies of Mango producers in Venda (D'Haese, *et. al.*, 1998) and at Leliefontein in the Northern Cape (Modiselle, 2001), showed that a lack of strategy and therefore development plans, was the result of a lack of knowledge and understanding of the large diversity amongst rural farming households. The hypotheses of these studies, which were proven correct, stated that rural households' behaviour is diverse and that this diversity is reflected in the way households practice agriculture. The conclusion of these studies was that it is essential that knowledge of diversity be integrated into planning appropriate support programmes and extension services. It is only through an accurate description of the actual situation of a particular farmer type, that a 'tailor-made' strategy for that group can be developed.

Two recent examples of typological approach utilisation in SA were in the construction of a typology as part of a Land Care project in the Eastern Cape and in analysing diversity at various irrigation schemes targeted for restructuring. Perret (2002) used the approach to quantify livelihood strategies based on wool production in the Eastern Cape: In 1999, a Land Care project was initiated to create financial stability in targeted communities through agricultural interventions. As one of the poorest regions of SA, livelihood systems resort mostly to claims and non-farming sources of income. Some farming takes place and wool production forms a significant activity in the area. Typological techniques were implemented to address diversity and to assist in planning of the Land Care project's activities. The criteria for classification, determined through literature review and consultation with locals, dealt with prevailing livelihood systems. Six types, varying from non-farming, very poor single female-headed households to full time farmers were identified. All types were identified in the various communities studied, although their relative sizes varied. The project strives to focus on the commercially inclined level: shearing shed and dipping tank rehabilitation, gene-stock renewal and capacity building in shearing and wool grading were implemented. However, as a result of the typology, which highlights the plight of certain households, the project also involves the very poor women in productive activities (especially wool sorting and grading). Concurrently, access to basic collective production facilities benefits all. A comprehensive strategy, based on farmer type and its main issues and threats, has therefore been devised. Each type's strategy has been described according to the issues and threats that have been identified during the surveys. The typology also provided *ex post* justification of the technical innovations, which led to the success of this award-winning Land Care project.

The typology approach has also been used successfully to describe farmer types and agricultural activity at two irrigation schemes of the Northern Province (Dingleydale and New Forest). As part of the Irrigation Management Transfer process, all assets at these schemes are to be transferred to the local population, after decades of public ownership and support. It also includes the rehabilitation of infrastructures and the establishment of farmers' Water User's Associations, which are to take over ownership and collective management of the scheme. At these schemes Merle *et. al.* (2000) developed a typology of households. Whilst it was impossible to take account of all household's characteristics; it is faulty to consider the scheme homogeneous. Hence, a typology that groups households with similar strategies and

characteristics, with regard to a given objective was developed. Diverse strategies depending on household history, composition, objectives, etc., could be created. Thorough economic analysis identified vulnerable farmer types, whose plight might worsen after the transfer. On the other hand, efficient and dynamic farmers have also been detected, which should become more efficient and integrated within commercial circuits. The study also highlighted differences in support requirements, according to social and micro-economic traits.

2.4.4. Conclusion

It can be concluded that the rural situation, even within a confined situation or a homogeneous agro-ecological zone, is too complex and diverse to promote a single strategy such as "middle class farmers" or commercial small-scale agriculture, as a realistic rural development strategy. The small-scale farming community is heterogeneous and must be treated accordingly. By recognising a range of farming systems, the tendency to focus only on a certain group can be avoided (Auerbach, 1998). A typology could therefore link social diversity to technical change by contextualising and focusing the interventions required for each type (Laurent, *et. al.*, 1999). Clearly farmers differ in approach, as a result of differences in aptitude, attitude and access to services and means. This explains the common inability to transfer sound technology. The challenge is to first describe rural diversity and then empower disadvantaged, homogeneous farmer groups, to revitalise the traditionally dynamic and competitive small-scale sector. The many stakeholders willing to support developing agriculture are positive developments. Support systems are available but need to be mobilised and coordinated. However, the inability to integrate these structures into viable agricultural and rural development programmes and projects (Van Rooyen, 2000), can be explained by the lack of focused support mechanisms dealing with the various agricultural groups. The typology approach, through systemic analysis of rural activity, enhances inclusivity as it highlights group-specific constraints.

In terms of the hypothesis that diversity must be quantified and dealt with to facilitate growth, the literature findings indeed support this hypothesis. Clearly, diversity leads to different needs in terms of development and clearly, dealing with such diversity strengthens development efforts. This issue will therefore get further attention in the case study at Sheila.

CHAPTER THREE: THE DEVELOPMENT ROLE OF AGRICULTURAL PROJECTS

3.1 Introduction

It has been established in this study that to obtain growth with equity (an important priority in South Africa); the agricultural sector must play a key part. It was also shown that the developing sector potentially has a significant contribution to make. However, in order to contribute towards growth, this sector cannot be treated as homogeneous.

It is argued that the lack of progress in agricultural development, despite innovative support, can to an extent be ascribed to a lack of focus on distinct groups with distinct requirements. These findings support the first hypothesis that quantification of economic and social diversity in an agricultural community will strengthen development efforts.

Another element required for successful agricultural development is the ability to integrate support structures with producers through viable programmes with optimal stakeholder-linkages in the value chain. This would facilitate sound strategies focusing on increases in profitability, employment and efficiency in the food and agricultural business sector.

Projects that harness natural resources, promote technological innovation, improve production, enhance human capacity, etc., by mobilising support and sound participation, potentially offer a comprehensive, focused approach to achieve development and economic growth (Van Rooyen, *et. al.*, 2002). These findings support the second hypothesis; stressing the need for integration of support structures through the project approach.

Whilst the project approach constitutes a major development strategy used in the past, the extent to which the concept remains valid today is evaluated in this chapter. The need for integration is substantiated through an argument for collective action and high potential integration models. This is followed by an examination of the traditional project approach; dealing with its philosophical background, definitions, project stages and elements, as well as the approach's record.

Subsequently the future of the approach, primarily dealing with the identification of key criteria for development through projects, is discussed. As it was established that diversity should be dealt with in terms of focused support of distinct farmer types, the integration of the typological approach into project planning and implementation will also receive attention.

3.2 Defining integration in agricultural development

3.2.1 Addressing inhibitive transactions cost

Sub-optimal production, poor infrastructure and unreliable markets dominate smallholder agriculture in South Africa. Most households obtain incomes from non-farm sources. Key resources such as land, credit, technology, inputs and markets are not accessible. More hidden problems are a lack of information, skills and fear of involvement (Bembridge, 1988b; Van Zyl, 1991; Low, 1995; Lipton, *et. al.*, 1996; Van Zyl & Kirsten, 1998). A crucial constraint faced by small-scale producers is the accessibility and affordability of agricultural inputs, which diminish their ability to raise income and increase food security. Despite this, smallholder agriculture must evolve, because it plays a crucial role in development, employment, welfare and stability (Delgado, 1998), as also established in the previous chapter. Agricultural development could basically be dealt with in two ways; promotion of sustainable low-input agricultural practices through technology and policy directives or (and) through initiatives to improve accessibility of inputs (Singini & Van Rooyen, 1995). These initiatives' potential in particular situations have to be clarified.

Commercial operators buy in bulk, lowering unit costs. Resource poor farmers cannot influence unit costs in the same manner and have to pay higher input prices, causing problems with competitiveness. These imperfect market conditions give rise to negative economies of scale, making larger farms more efficient (Van Zyl & Kirsten, 1998). While remunerative opportunities for the smaller farmer are available in value adding and marketing, these typically require processing associated with high cost. Most marketable agricultural products also have a high ratio of cost to final value, excluding many small farmers due to the limitation of the associated 'up front' investment (Delgado & Siamwalla, 1997). This is illustrated by an example from the Netherlands, with highly technologically sophisticated small-scale farms. Even despite great efficiency, economies of scale has had a significant influence on the reduction in the number of Dutch farmers by 50%, to 200 000, from 1960 to 1980. Since then another 50% reduction to less than 100 000 farmers on even larger farms took place and the trend is continuing (personal communication; Dr. HJ Enserink, ICRA, Wageningen). Whilst EU policy also induced these changes to some extent, the impact of economies of scale is significant: real prices stayed relatively constant since the 1960s while real input costs rose continuously (Ruigrok, 2001).

While specific statistics for SA are less known, it has been established that a significant number of commercial and developing farmers have left the industry, as a result of negative trends in input: output ratios. In the commercial sector this has led to fewer, bigger farms, whilst many small-scale farmers in rural areas simply stopped or reduced agricultural activities as support schemes were scaled down and terminated (Vink, 2000; Van Rooyen, 2001). Aggravating the problem is that cost reducing opportunities and incentives for small farmers are simply lower than for larger operators (Delgado, 1998). While there are various aspects involved in farm expansion and terms of trade trends, the evidence suggests that

economic integration of stakeholders to address economies of scale in production through a project approach represents a viable strategy in dealing with a major small-scale constraint: inhibitive input cost.

3.2.2 Collective action strategies

The importance of a unified farmer lobby negotiating for more favourable terms of trade is obvious (Van Rooyen, 1998): By working together, farmers identify needs, consolidate demands and aggregate economic power. The new strategic plan for SA agriculture encourages formally established farmers' organisations as a powerful vehicle for empowerment in the long term. Collective action and bargaining has the potential to activate a range of services to small farmers. This capacity does not currently exist and more direct action is required (Carney & Van Rooyen, 1996). Agricultural co-operatives in South Africa therefore constitute a potentially important structure for supporting new farmers as they operate as agents for their members in purchasing, selling and processing activities. They usually also administer payments and generate economies of scale in providing services at reduced costs. They can reduce risk to members by introducing pool-pricing and insurance schemes and enable access to new small and large scale technology (Van Rooyen, 1998b; NDA, 2001b). The definition of a co-operative as a formal collective action by an interest group to serve its economic interests should be the point of departure. Member commitment and economic efficiency are basic, essential conditions as is the development of member ethics and values. Member ownership, viable business practices and supportive interaction with government are essential components of a formal collective arrangement (Van Rooyen, 1998b).

In former homeland areas, co-operatives previously served as governments' instruments to promote farming through input and credit services (Van Rooyen, 1998b). Many of these failed due to poor ethics among members and management and as a result of lack of managerial capacity and skills, resulting in poor business practices (Hussy, *et. al.*, 1993; Stilwell, 1998). Measures to develop collective actions between farmers through capacity building and responsible financial support are however essential as part of project development (NDA, 2001b; Van Rooyen, 2001). Pre-conceived ideas on the appropriate organisational format should be avoided, local initiatives should be the basis and sound business principles must be enforced (Hussy, *et. al.*, 1993; Singini & Van Rooyen, 1995; Stilwell, 1998). Services could include credit, insurance, input provision, marketing, research, extension, managerial support, storage, agro-processing, infrastructure and lobbying (Singini & Van Rooyen, 1995; Stilwell, 1998). Government policy to underpin precisely this type of co-operation is addressed in the Strategic plan for South African Agriculture (NDA, 2001b).

Whilst mixed results from previous 'collective actions' (i.e. contract farming, co-operatives, out-grower schemes) have been achieved, it is argued that a support strategy based on stakeholder integration could provide the catalyst for small-scale efficiency. Collective action is the logical route to farmer empowerment (Carney & Van Rooyen, 1996; Delgado & Siamwalla, 1997; Chikanda & Kirsten, 1998). However, historic institutional co-operation and linkages between public and private sectors, as well as

between institutions, were generally poor (Botha, 1995). In contrast, Merrill-Sands & Collion (1992) argue that increased stakeholder participation is a critical ingredient for development. These authors provide evidence that indicates that in specific integrated projects in the USA, the Netherlands, Israel and China, impressive agricultural growth is evident. The implementation of a project approach, where farmer groups are involved in planning, organisation and implementation constitutes an ideal setting facilitating these much-needed links between stakeholders in the emerging agricultural sector.

3.2.3 Designing integration and collective action

Although integration of smallholders into input supply, processing and marketing is clearly required, these types of services are often not functioning efficiently in the developing scenario to begin with (Delgado, 1998). While support services are in theory now available to all farming sectors in South Africa (due to radical policy changes), accessibility remains limited, as institutional settings, the vehicle for support delivery, are lacking (Stilwell, 1998; Van Rooyen, 2001). Institutional transformation is needed to facilitate effective access. Pro-active policies and strategies are required, but subsidies are fiscally unsustainable, and require institutional and administrative costs. These services, usually operating interdependently, must be integrated. Credit institutions, input suppliers, processors and others must be linked more closely to producers (NDA, 2001b).

Integration usually has three dimensions, the first being a shift from macro to micro strategies, i.e. from policies to strategies programmes. This is addressed within the strategic plan for South African agriculture (NDA, 2001b), which emphasises the need for co-operation in the agricultural value chain and specifies the crucial role of the private sector. The plan also deals with the second dimension; i.e. linkages within related sectors, or integration. The important link between, for instance, agricultural and transport development is a case in point. The third dimension of integration deals with sequential development, linking actions in a logical 'cause-effect' sequence to ensure a sound activity flow (Personal communication; Dr J v Rooyen, ABC, 2001). This has to be developed further through innovative programmes and project innovation.

As an example, a contract-farming scheme represents a potential integration model. Especially schemes with substantial farmer participation in management function well and show sustained production. While economies of scale tend to lock out independent small operators in high value activities with significant input cost, these types of projects could make these enterprises accessible for small-scale producers. Educated, local people should be involved in management. Participants must be skilled, as those with limited skills are often too easily subjugated to be effective in participatory control. Selection is thus required and is in fact a prerequisite for success. "Any scheme that sets about supporting small-scale rural producers has to confront the issue of targeting, because of fiscal resources". Various authors suggest that the administrative and training costs of very specific targeting and increased capabilities are easily covered by the results. Careful targeting is necessary to avoid making resources available to

people who cannot utilise them effectively and exclude people who can (Glover, 1987, Little & Watts, 1994; Jaffee & Martin, 1995; Singini & Van Rooyen, 1995; Delgado, 1998). This evidence again supports the diversity hypothesis. High returns to co-ordination amongst research, farmers and extension are also beneficial in integration models, particularly where input use is complex, requiring knowledge and timely availability (Delgado, 1998).

According to Groenewald (1998), the history of 'poor whites' settled on irrigation settlements early in the previous century, constitute a relevant example of integration. Under this system, settlers joined these government schemes on a trial basis. They received loans at favourable rates to purchase equipment. Land was leased for a period of five years. Rents were based on the value of the land, and cost less than 5% of the land value. Settlers could at any time exercise an option to purchase, through redeeming the price plus interest over twenty years. Farmers without the necessary ability and perseverance left the settlements, while those who gained them, became efficient and expanded. There is no reason why such an approach could not be successful in current times, as the challenges are similar. If suitable settlers are recruited, such projects should have the same potential for success, provided appropriate technology and well-directed support programmes accompany the effort.

Whilst the public sector is now focusing on the small-scale sector, private sector response has been limited. Public facilitation is therefore required (NDA, 2001b). However, development managed by the public sector often leads to artificial, unsustainable organisations. Government involvement in marketing also led to disappointing results in the past. Monopolistic approaches to institutions of collective action are in principle not desirable and actions should encourage markets, not replace them. Therefore, the appropriate institutional form to promote marketed output should involve a mixture of public and private involvement (Delgado & Siamwalla, 1997; Chikanda & Kirsten, 1998). The public sector could facilitate a process whereby organised agriculture, co-operatives etc., are involved in capacity building and creation of access (Stilwell, 1998; Carney & Van Rooyen, 1996).

Various other institutional types of smallholder production support are known, varying considerably in ability to handle transactions cost, according to their links to processing and marketing. The independent smallholder remains the predominant form of production. Where low transactions costs exist, this is ideal, provided that research, extension and input suppliers are available and effective. Where transactions costs are high, integration with other stakeholders becomes economically attractive. Typically this includes contract farming, producer co-operatives and out-grower schemes. In whatever form, this constitutes a viable way to integrate small farming within the production chain, thus promoting incentive and growth. Many of these schemes represent some of the most lucrative opportunities available to smallholders. During 1990, a review of global development experience by the World Bank showed that such strategies, emphasising broad-based growth and provision of services, was the most effective route for sustained poverty alleviation. Participating farmers typically benefit through assured input supply, credit against delivery and an assured market. Extension is usually provided, typically at a higher rate and quality than State services. Access barriers to assets, information, services and markets are dealt with through contractual arrangements.

The involved party (supplier/marketer/processor) gains the advantage of a relatively assured supply of the commodity at harvest and the option of making collateral loans. Such arrangements eliminate extensive expense and monitoring problems, facilitate better relations and share overall risk (Glover, 1987; Hussi *et al.*, 1993; Grosh, 1994; Little & Watts, 1994; Swegle, 1994; Jaffee & Martin, 1995; Delgado, 1998).

A source of information and skills and an alternative for integration of small-scale producers into mainstream agriculture are commercial farmers. Incentives for them to share their insights must be investigated. A strategy that could be explored could be the linking up of emerging farmers' associations with functioning commercial enterprises. This could facilitate improved access to technologies and services to implement these technologies (Carney & Van Rooyen, 1996). Small farmers do recognise a need for skill development and partnerships, where commercial experience is utilised to facilitate access and obtain skills (Lipton, *et al.*, 1996). Many such co-operational efforts in SA show significant potential (Potgieter & Heunis, 1995; Van Zyl *et al.*, 1995; Ngqangweni & Van Rooyen, 1998). A number of variants of participation schemes have also evolved between owners and farm workers (Van Zyl *et al.*, 1995). These joint ventures hold considerable potential for rural development and agrarian reform (Ngqangweni & Van Rooyen, 1998). Another option; farm worker equity schemes include examples whereby workers buy into an existing going concern, or establish partnerships to start new ventures. It provides empowerment opportunities and contributes to rural welfare (Nel, *et al.*, 1995; Ngqangweni & Van Rooyen, 1998). This approach has substantially fewer fiscal requirements than state led farmer settlement (Nel *et al.*, 1995; Potgieter & Heunis, 1995; Ngqangweni & Van Rooyen, 1998).

While the integration of stakeholders is a promising avenue of growth, the alternative is often benign neglect. Effective access will stimulate entrepreneurial activity and trigger production and growth (Delgado, 1998). The focus on access in these types of models is shared by the FSP approach, with support through improved access to resources and services (Van Rooyen, 1993; Singini, *et al.*, 1992). The successful elements of the FSP approach should be useful in a redesigned project approach. A particular focus should be the classification of homogeneous groups to accommodate diversity in project areas, for sound participation. Farmer selection should be objective and criteria should emphasise a positive attitude, commitment towards and aptitude for farming. Farmers should be involved in management, and support in training in these skills should be available. Individual responsibility and accountability must be clarified (Van Rooyen & Nene, 1996).

Integration, through a redesigned project approach provides a practical focused approach dealing with a variety of agricultural and rural development constraints. This approach, facilitating access to services and inputs is to an extent a return to the conventional wisdom of the 60s and 70s with smallholder commercialisation through projects. The next sections will examine these past strategies in depth, to facilitate insight into previous failures.

3.3 Describing the project approach

3.3.1 Definitions and notions:

A serious issue confronting society is successful implementation of development interventions or projects. Many failures in this regard can be traced to poor preparation, planning, selection, implementation or a combination of these. A project is an instrument of change in altering a major constraint; a co-ordinated series of actions resulting from a policy decision (Benjamin, 1980). It therefore constitutes an intervention with the aim of addressing a specific problem such as correcting a market failure. A project has a conceptual boundary containing the physical structures, financial flows, beneficiaries and participants. It has a start and finish and entails specific objectives for an improved future situation. It deals with choices on where and how to intervene through time with investments and activities. It entails an intervention through organisation of land, labour, capital and management resources in the context of a particular human setting. Key aspects include structuring, mobilisation and participation of willing and able participants, other stakeholders, infrastructure, human capital development systems, etc. (Van Rooyen, 1995). Development projects are often publicly funded and have a central management function. The FAO refers to a development project as “a proposal for investment where a cost stream results in a certain flow of benefits over a specified period”. Gittinger (1982) describes agricultural projects as interventions aimed at improvement through a complex series of activities that use resources to gain benefits. If effective, production costs compare favourably with benefits produced. World Bank publications expand and link project development to a flow of benefits. “Generally, in agricultural projects an investment asset is expected to realise benefits over an extended period of time”. A definition for the project approach could therefore read: An institutional intervention model for changing a group's livelihood. This involves complex interaction amongst various interdependent (technical, physical, biological, social, political) components. It further entails an investment activity in which financial resources are expended to create assets that produce benefits to individuals and society over an extended period (Van Rooyen, *et. al.*, 2002).

Various descriptions of the project approach are available because of the various interpretations of the concept. As described, key elements include a technical intervention, based on a problem, leading to a proposal and eventual implementation. Managerial and organisational skills are required; input and processor networks must be activated; demand must exist for the envisaged product; and selection of appropriate participants and support services must occur. Sound management is vital and the implementing agent should primarily optimise linkages (Van Rooyen, 1983; Van Rooyen & Nene, 1996). Community based structures should be stakeholders (Stilwell, 1998). Projects are often financially supported by both government and development agencies and managed as part of a broader development strategy. Given the financial implications of a project, subsidisation is required. As this type of development can be considered merit good, the public service is the ideal facilitator, but responsibilities, funding and performance criteria must be clear. Where the private sector or Non Government

Organisations (NGOs) could provide a service at a required standard, outsourcing this service should improve efficiency. The aim usually is increased production to stimulate job creation, optimal resource use, effective technology and co-ordinated management (Van Rooyen, 1995; Van Rooyen, *et. al.*, 2002).

Criticism against project definitions is that they often emphasise technical aspects, i.e. capital or financial flows, while no direct reference is made to the development functions of a project which include human development, distributional and social impacts. The contemporary view is that development projects should in the first place be people-oriented. Recent convention thus defined a development project as: "An instrument of change: a co-ordinated series of actions and interventions resulting from a decision to change resource combinations and levels so as to contribute to the realisation of development objectives". The definition of a development project should be expanded to contain the notions of participation and sustainability for stakeholders (including farmers, public and private investors (Van Rooyen, *et. al.*, 2002).

Agricultural development projects do not function in a vacuum: Their nature is determined in context of policy and strategy as they constitute a link in development planning and implementation. Projects must be judged the basis of effectiveness, productivity and equity. Economic and social objectives can be seen as the improvement of prosperity through efficiency (Van Rooyen, *et. al.*, 2002). This broader approach to defining a project allows objectives to include increased income, employment creation, distributional or environmental aspects and other growth dimensions. A wide range of criteria measuring micro and macro impacts will therefore be required to determine whether a project investment is justified or not. An analytical framework for managing and analysing information across the expected life of a project is therefore required. A principle of economic project appraisal is that participants must benefit consistently more in the "with project" scenario compared with a "without" project scenario. Government must contribute to a "sustained" beneficial status, through support in technology development, extension, infrastructure investment, etc. Government should ensure that all support be aligned with policy objectives. However, if the long term economic and financial benefits do not exceed the costs, subsidisation, social engineering and aligned policies will not guarantee sustainability and participation.

A limitation of the project format is its reliance on quality projections of expected benefits and costs. Still, projects must be appraised, or inefficient expenditure is almost sure to result. When all dimensions are attended to in a thorough manner, projects become focused and driven entities to promote development over time. This creates focus within broader development strategies, macro economic objectives and policy. Within this framework, development projects do not necessarily have to focus on production. Job creation, foreign exchange savings, livelihood improvement and income redistribution should be aimed at within development planning via the project approach. Project interventions therefore seldom result only in direct impact i.e. those that only affect project beneficiaries. A range of effects can be recorded. These include direct and indirect or secondary impacts, i.e. multipliers generated by increased income; employment linkages in up- and down stream activities required for a project, and a range of external effects, including environmental, ecological, institutional and social impacts. The true impact of a project should thus be assessed in terms of all these effects in order to determine the real contribution.

In view of the definitions and description of agricultural development projects, they should be judged primarily on the basis of effectiveness; productivity and economic efficiency. Equity considerations, however, should also apply in project evaluation: Given that one of the hypotheses of this study argues extensive economic diversity in rural populations, an intervention through a project should cater for the different types of beneficiaries in a targeted population. Still, an agricultural project that is not driven by the economic principle of optimisation will be in danger of producing unacceptable financial and economic results, especially for beneficiary groups. Broad economic and social objectives should thus aim at improvement of prosperity through preference to efficiency-driven actions. Given the usefulness of the project format, the concept has previously been used extensively as instrument to promote development and change. Although mistakes were made, the concept remains sound. A well-designed project can indeed still be the “cutting edge” in development strategy and programmes (Gittinger, 1982). Issues related to this “cutting edge” ideal are discussed in following sections.

3.3.2 The project cycle

The process of project development follows a cyclical sequence: An idea germinates; passes through clarification steps; activities required to achieve the objectives are isolated; alternative options are appraised; followed by decision-making; implementation; monitoring; completion and final evaluation. The term project cycle indicates this cyclical nature of the project approach. In operational terms each stage in the cycle leads to a decision point. The decision to be taken at the end of each stage is if and when to continue to the next stage. The various elements or stages in the project cycle are described in Fig 3.1 with feedback processes between each interactive stage in the cycle (Van Rooyen, *et. al.*, 2002).

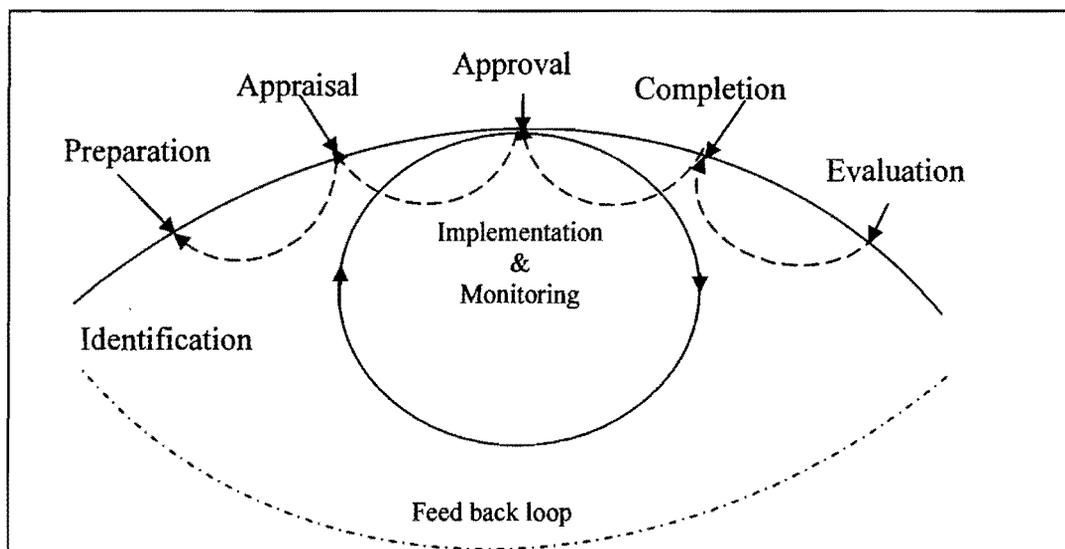


Figure 3.1: The project cycle:

IDENTIFICATION: This stage involves identifying potentially fundable projects. Information sources include specialists, local leaders and factors such as market price changes, future demand projection, policy priorities, etc.

PREPARATION: Preparation has two parts: A pre-feasibility (qualitative, subjective analysis) study and a more detailed analysis. Major objectives are defined and alternatives to achieve the same objective explicitly addressed. If promising, detailed planning and analysis follow. With large projects, an investigating team including experts is crucial. Screening ensures that the project is technically and economically viable, and compatible with existing systems, resource use, and the social dynamics of the area.

APPRAISAL (*ex-ante* analysis): After detailed analysis, an independent team conducts a critical appraisal. This team re-examines every aspect regarding feasibility, soundness and appropriateness and might recommend further preparation work if some data are questionable or some of the assumptions are faulty. Approval of a project triggers the required set of implementation actions.

IMPLEMENTATION: It is usually subdivided into several stages: The first stage is an investment period of 2-5 years during which major fixed investments are made, most staff is engaged, equipment procured, etc. The major benefits are expected to flow after this stage. A development and monitoring period subsequently follows. Adjustments could be made as required. Completion or maturity of a project can be as long as 25 – 30 years from the start, during which periodic benefits and costs continue to accrue, and impacts are more apparent and measurable.

EVALUATION: Evaluation or impact assessment involves measuring elements of success and failure. This establishes the results of projects, both intended and unintended, and the differences, positive and negative, on society. A project seldom results only in direct impact and only for project beneficiaries. Effects often include secondary impacts such as increased income earned by participants, labourers, professionals working on the projects, etc. Employment linkages could occur in up- and down stream activities and a range of external effects, which could include environmental, ecological, institutional and social impacts. Evaluation provides lessons- for future project planning and analysis. It can include on-going monitoring, or take place after completion of a project. An independent team is usually tasked to evaluate the extent to which objectives and specifications were met.

Project analysis can be divided into seven inter-related modules or elements. These represent a comprehensive attempt to identify relevant processes, data and information that quantify benefits and costs. It is used to identify analytical elements for each stage in the project cycle:

- (i) **TECHNICAL ASPECTS:** Physical inputs and outputs of goods and services and technical relations. Experts provide information on supplies, productivity, and input/output coefficients.

- (ii) **INSTITUTIONAL/ORGANISATIONAL ASPECTS:** Appropriateness of the institutional setting (rules of conduct). Participant custom/culture is to be understood and accounted for to increase adoption and success. Aspects include land tenure, farmer organisations, authority, and responsibility.
- (iii) **SOCIAL ASPECTS:** Evaluates broader implications; resource and income distribution, job opportunities, losers and gainers per social group, gender issues, impact on social organisations, change in labour and quality of life, i.e. water, health, education, etc.
- (iv) **COMMERCIAL AND BUSINESS ASPECTS:** Demand for the product, effects on prices, processing and value adding effects, effects on the market (domestic/export), and quality of the product. Input supply and demand issues include securing supplies, inputs, financing, etc.
- (v) **FINANCIAL ASPECTS:** Most data must be translated into financial norms for comparability. Market prices are used. Includes effect on participants, community based organisations (CBOs), corporations, project agencies, and the national treasury. At farm level, financial data is handled in farm budgets while organisations have financial accounting systems.
- (vi) **ECONOMIC ASPECTS:** The most important factor in ultimately determining the impact of any investment in agriculture. Includes project value from society's viewpoint and the efficiency with which scarce resources are allocated. Opportunity costs are used.
- (vii) **ENVIRONMENTAL ASPECTS:** Deal primarily with biological and physical environmental impacts, i.e. irrigation impact, disease, scenic beauty, preserving unique plants, animals, etc.

3.3.3 Causes of project failure

Throughout the seventies and eighties agricultural growth worldwide continued due to improved technology, programme planning and extensive public sector investment in rural areas. Respected development experts (i.e. Chambers, 1974; Lele, 1977) agreed that developing countries could not afford to ignore the project approach as a model for agricultural and thus economic growth. Project-type of investment dominated the development agenda until the early nineties. Public investments in input and mechanisation support, credit, transport, infrastructure and settlement (typical projects) were made through ministries, parastatals, development agencies or combinations of these. Agricultural growth, even in sub-Saharan Africa, was evident during stages of this period. However, cost benefit analyses confirmed price distortions and limited economic merit in these projects. Repeated failures plagued many of these development projects that were sociologically ill informed, ill conceived or poorly implemented (Gittinger; 1982; Tisdell, 1985; Cernea, 1991; Carruthers & Kydd, 1997). This led to the use of projects

diminishing during the late eighties (Carruthers & Kydd, 1997). As described in the previous section, projects were viewed as instruments promoting development and change, altering major constraints through co-ordinated actions originating from a policy decision. Project interventions aimed at improving livelihoods through activities that use resources to gain benefits. Given the described theoretical potential for development that the project approach clearly offers, the obvious question is why the practical application has so often delivered disappointing results.

During the eighties and early nineties agricultural projects managed by parastatals in SA promoted effective resource and labour use. These projects aimed at establishing a business-corporate type of rural class that would use sophisticated, capital intensive methods (Van Rooyen, Vink & Christoudolou, 1987). Particularly in the homelands a variety of projects, with the goal to establish independent farmers were initiated. Examples in the North West Province include the Sheila-Mooifontein and Taung projects. Also in other homelands such as Transkei, Kwazulu and Venda selected community members were settled as 'project farmers', 'managed' under the control of corporate project management. Agricultural development corporations were invariably established to execute these projects (Van Rooyen, Vink & Christoudolou, 1987; Binswanger, 1994). The philosophy of optimal resource use through modern, scientific farming methods led to a heavy reliance on capital and management. Sophisticated mechanised systems using, for example, tractor fleets, advanced milking parlours and high value cash crops were developed. Whilst optimal food production obviously was a major objective, creating the perception of independence was also highly important. This encouraged the use of high input technology and extensive external management (Van Rooyen, Vink & Christoudolou, 1987). Farmer committees officially assisted project management in decision-making. In Bophuthatswana these farmer committees were in general not actively engaged in project management (Worth, 1994).

Generally, the strategy did not succeed in developing a class of self-reliant farmers in SA and farm businessmen did not evolve, whilst stable production was seldom achieved. Corporate-managed settlement projects in general failed to generate sustainable development. Increasingly projects were seen as inefficient in terms of, fiscal affordability, developing entrepreneurs and overall rural development (Van Rooyen, 1995). In retrospect, the objective of establishing commercial farmers in the homelands under the prevailing political economy was unrealistic. Homeland farming served mainly to supplement household entitlements in the form of food, goods for trade and barter, and income from selling and savings through food production. Opportunities in other economic sectors were generally viewed as more attractive. The aim of commercialism diminished given this agricultural reality. A fixation with perceived optimal farm size and income levels, a management style of control rather than facilitation, participant selection according to political affiliation, insecure tenure, and deficient support also contributed to project failure (Van Rooyen, Vink & Christoudolou, 1987; Van Rooyen, 1994; Binswanger, 1994).

However, limited success achieved with the approach in SA can to a large extent also be attributed to the lack of political commitment to the development of independent, middle class farmers (Bembridge, 1988; Van Rooyen, 2000) and the resulting lack of facilitating policy, as described in Chapter 2. Administrative

problems (weak management) and the unfavourable policy environment, where farmers' incentives were compromised played a key role.

As stakeholder integration is fundamental for sustained growth, progress was also inhibited by inadequate participation as described by many authors (e.g. Botha & Coetzee, 1992 and 1993; Kirsten, Van Zyl & Sartorius von Bach, 1993; Van Rooyen, 1994). Generally planning was done in a 'top-down' manner, without sound consultation of beneficiaries, resulting in a lack of ownership (D'Silva & Bysouth, 1990; Botha & Coetzee, 1993; Van Rooyen, 1994).

Given this constraining environment, the term 'bad projects result from bad policy' reflects the reality of the time (Van Rooyen *et. al.*, 2002). In the main, a failure by initiators to adapt to the social environment and introduce participative development strategies resulted in farmers not being actively involved in their own development. The human factor was subordinated to the urgency of technological and political considerations. To a large extent development was done to and for farmers and was largely imposed by higher authorities (Van Rooyen, Vink & Christoudolou, 1987; Binswanger, 1994; Worth 1994; Anandajayasekeram *et. al.*, 1996).

A critical view would conclude that a successful large-scale project in a less developed area is difficult to achieve, given a lack of agricultural, financial, managerial and institutional capacity. However, elementary mistakes were often made in project planning and implementation. Many project failures can simply be traced to poor preparation, selection and/or implementation, leading to inefficiency. Participants were often not convinced they would benefit from a project and consequently would not commit fully to it. Often the same elementary mistake of not taking aspects that focus on participation and empowerment into account were repeatedly made (Van Rooyen *et. al.*, 2002). History therefore records the failure of the so-called project approach despite the fact that the concept proved to be sound. Summarised aspects of project failure, as described by various authors above, are:

- Externally (top-down) driven initiatives, causing lack of ownership, responsibility and participation
- Inadequate design, implementation or support/administration systems (management)
- Unsupportive policy environment, i.e. poor infrastructure and inhibitive land tenure
- Failure to appreciate the social and political environment and unrealistic expectations.
- The use of inappropriate technology and/or infrastructure.
- Problems related to poor project analysis.

Although the objectives and intentions of the project approach were mostly sound, it generally failed to raise welfare in rural areas. While projects often resulted in short term higher yields, it did not result in an independent middle class small farmer, as aimed at since the Report of the Tomlinson Commission (Bembridge, *et. al.*, 1982; Brand *et. al.*, 1992; Van Rooyen, 1993; Van Rooyen & Nene, 1996). Relatively few people benefited, given the numbers of small holders, and recurrent costs were up to four times as high as incomes achieved by participants (Bembridge, 1988).

3.3.4 The future of the project approach?

The importance of an integrated agricultural system for economic growth and development is emphasised by analysis and it can be argued that agricultural projects as interventions to structure change still constitute an important means to alleviate poverty (D'Silva & Bysouth, 1990). In an evaluation of a decade of World Bank sponsored development projects, the importance of the project cycle as guideline for proper project planning, appraisal and evaluation is stressed (Anon., 1987). Not acknowledging this well-known process for sound implementation of projects lead to many failures in the past. The project framework is still a major part of development strategy and most World Bank projects are planned and evaluated according to the principles of the project cycle (Anon., 1987; World Bank, 2000). The FAO also utilises the approach extensively and has recently updated their "Windasi user manual"; a software programme which facilitates financial and economic evaluation of projects. Recent policy adaptations and guidelines, as described in the Strategic Plan for South African Agriculture, also point towards the project approach as a viable alternative for development. This strategy places a premium on linkages and integration of stakeholders and describes forward and backward linkages as crucial for development.

Given the previous political system that actively inhibited the development of a viable, sustainable small-scale sector, the failure of the project approach should not be surprising. Good projects from bad policies are therefore virtually impossible. The recent eradication of inhibiting policies, as described in the previous chapter, opens the door for another evaluation of the project approach. Given 'good policies' the more facilitating environment for 'good projects' should now promote development. Development requires higher agricultural production, more opportunities and more participation. All these key aspects could be achieved through a sound project approach. The project approach therefore remains an ideal instrument to 'unlock the potential' in a developing area, through managerial, institutional and other inputs, for optimal agricultural production from a number of selected participants, with the contributed impact of enhanced livelihoods in the community. Projects are a potential solution to the problem that developing agriculture is not contributing to economic development to the extent required.

However, to avoid the mistakes of the past, the original project cycle described by Gittinger (1982) must be adapted to facilitate participation by selected farmers throughout the project cycle (FAO, 1992; Van Rooyen, 1994; Botha, 1995). This is to involve participants, facilitating their articulation of their requirements. The popularity of the participatory approach is based on the assumption that it eliminates 'top-down' overemphasising of technical aspects; values inputs from beneficiaries, incorporates local knowledge and increases commitment, sustainability and utilisation. Group dynamics create additional benefits such as reducing suspicion, exposing divergent views, sharing responsibility and facilitate assessment of local interrelationships (Anandajayasekeram *et. al.*, 1996). Communication and linkage between all stakeholders must be specifically addressed (Botha, 1995), even more so if the objective is integration. Linkage problems seriously reduce institutional performance and are costly (Souder, 1980), while effective linkages expands economic and social returns on investments (Van Zyl & Van Rooyen, 1995; FAO, 1995). This requires deliberate mobilisation and capacity building to ensure sound projects

addressing real needs. This process takes time, but enhances sustainability and value (Van Rooyen, 1986). Only then will projects address economically viable preferences of farmers and therefore be inherently sustainable. Simply put: Focus should be on the farmer as well as on the enterprise.

It is now also acknowledged that extensive consideration of sociological and anthropological aspects are required for development as it facilitates project adaptation to existing socio-cultural conditions. Recognising the centrality of people in projects is not rhetoric, but must be a key development paradigm. For projects to be successful, economic and social objectives need to be balanced (D'Silva & Bysouth, 1990). Social knowledge brings complementarities to projects, as social science must be converted into operational know-how (Dusseldorf & Box, 1990; Cernea, 1991).

Another element that often lead to the failing of projects, but which has not been identified in most analyses, is the aspect of rural household diversity as discussed earlier. Very seldom was the need for selection of homogeneous groups in terms of attitude and aptitude addressed in project planning. This meant that the participants did most often not share exactly the same constraints, did not have the same opportunities and did not strive for the same goal. However, if these aspects are dealt with, the approach surely has potential as a development strategy.

In conclusion; although agricultural policy has become much more facilitating, accessibility is still limited, as institutional settings, the vehicle for support delivery, are lacking. Public facilitation is therefore required. The project approach is an ideal instrument to 'unlock the potential' in a developing area, through managerial, institutional and other inputs, for optimal agricultural production from selected participants with the contributed impact of enhanced livelihoods in the community. Integration between stakeholders is now more important than ever to lower cost and facilitate smallholder access to services and resources. Given the fact that policy is now geared towards the small-scale farmer and the valuable lessons from experience dealing with participation, linkages, social reality and diversity, projects could bring direction to development and facilitate managerial skills, productivity and empowerment. The project cycle must be extended to facilitate participation. Selection of homogeneous groups in terms of attitude and aptitude must in future also form part of the cycle. With the proper attention to detail and elimination of the mistakes discussed, projects should be viewed and could indeed be utilised as the "cutting edge" for development in the agricultural environment. The approach focuses resource utilisation, the application of appropriate technology, group organisation, resource and service access, creation of production and managerial skills and a productive agricultural model. It therefore offers an allocation system to direct scarce resources and a management framework for successful integration and co-ordination of the elements required for development of the small-scale agricultural sector, given the particular access constraints the sector has to deal with. It is especially useful for small-scale farmers with the low opportunity cost of communal land and labour that so characterises the sector. Key issues related to this "cutting edge" ideal are discussed in the following section.

3.4 Redesigning the project approach for agricultural development:

3.4.1 Introduction

It has been established that the small-scale agricultural sector has been significantly inhibited in SA, particularly due to limitations in access to land and support services. It was also established that small-scale producers could potentially contribute to agricultural production and more importantly, that this sector had a crucial role in agricultural growth and economic development.

Significant policy changes addressed small-scale access to land, support, etc., and agricultural growth is now recognized as an important part of economic development. However, while a more facilitating environment has been established in theory, small producers in general have less access to resources today than before the democratisation of the early nineties (personal communication, Dr. Van Rooyen, ABC, 2002). This is a result of a lack of focused support programmes and the dismantling of agricultural schemes.

Innovative agricultural development strategies are therefore urgently required. One such setting, specifically focuses on lowering costs through integration in the value-chain: It will thus be proven in this section that integration between role-players in agricultural production through the project approach fits perfectly within the new policy focus. It will also be illustrated that lessons from previously failures were learnt and will facilitate sound project implementation. As integration within the agricultural industry is a policy priority, projects could bring direction to development. The project approach model was consequently designated as potentially an appropriate model for smallholder support.

The findings of the study thus far can therefore be summarised as six building blocks for the redesigning of the project approach in agricultural development:

- I: Agriculture has a key role to play in transformation and thus economic growth.
- II: A focus on human capacity development is required
- III: Access to agricultural support services and resources (land, capital, etc.) is required.
- IV: Facilitating policy and a conducive environment for viable small-scale farming is finally developing.
- V: Dealing with rural economic diversity in agricultural development programmes is a prerequisite for a viable small-scale agriculture.
- VI: Integration of role-players in agricultural production, to mitigate high cost, can facilitate human capital development and access to services and resources, create a conducive environment, facilitate diversity quantification and provide the catalyst for viable small-scale agriculture.

3.4.2 Project design criteria

The analysis of development history and direction given by policy in the previous chapter dealt with results from a variety of analytical studies, policy documents and scientific papers. Several key findings were reached. These essentially described the 'rules of the game' i.e. the principles of agricultural development, as they evolved since the early 1950s. These derived rules, are to be incorporated in a framework for project planning, implementation and evaluation (i.e. sound application).

These key findings have direct bearing on the hypotheses that rural household diversity in access to resources and services due to economic status, must be quantified, and that a project approach as agricultural support model to lower costs, still has application. These findings are now incorporated into a proposed framework for project planning, implementation and evaluation. In other words: The aim of this study is to prove that a support strategy based integration of stakeholders in a project approach, quantifying economic diversity, is required for agricultural development.

Therefore, major findings related to agricultural support strategies are refined into "project design criteria" in order to guide project design, appraisal and implementation processes. Four comprehensive design criteria, as described below, were identified. To test the validity of these criteria, they will be discussed in depth during the *ex post* analyses of the Sheila project and validated in an *ex ante* evaluation of a project proposal. The four design criteria read as follows:

1 Technical aspects of a project should be reconcilable with social realities

Various aspects are relevant for this criterion: Is the stage of agricultural development of the target group recognised and does the intervention fit this development stage? Is the specific role that agriculture plays in the livelihoods of the target group recognised and is the commitment needed for the project realistic? Are the major disruptive effects of impacts such as HIV/Aids on production and lost remittances accounted for in project specifics?

2 Diversity should be recognised and a typology approach implemented

Rural economic diversity in the target population must be described to identify and consequently empower homogeneous producer groups. Differences regarding access to resources, services, aptitude and attitude must be quantified into focused support measures according to type requirements.

3 Stakeholders linkages/co-ordination should be facilitated & structured

Depending on the particulars of a project, specific stakeholders should be involved in the planning and implementation phases. How their involvement is structured so that all parties gain optimally

should be negotiated. Linkages between participants, service providers, buyers, etc., to facilitate efficient access to input and output markets should be agreed upon (i.e. is a conducive environment created) and savings/value adding measures to lower costs should be facilitated.

4 Skills development (HCD), participation as well as social and economic sustainability should be institutionalised

Communication and dialogue between stakeholders should be structured; i.e. particular functions and model of a representative forum should be determined. Representatives from a CBO should be empowered to participate effectively in project management. Selection and empowerment of participants should be initiated according to scientifically determined requirements whilst study groups should be formed to address adaptive on farm research, etc.

3.4.3 Comparing design criteria with a systemic evaluation framework

The Development Bank of Southern Africa (DBSA), established in 1983, is an important role-player in agricultural development. Its key purpose is to address socio-economic imbalances and help improve the quality of life of the people of Southern Africa. Its mandate is to facilitate provision of infrastructural development finance; finance sustainable development in partnership with the public and private sectors; respond to development demands and act as a catalyst for investment (www.dbsa.org). As a leading change agent for accelerated and equitable socio-economic development in Southern Africa, the DBSA recognises the principles of sound economic and rural development.

During the 1990s, the DBSA developed a so-called set of 'decision rules', accommodating operational and political considerations, as these issues impact significantly on agricultural development. Certain similarities between these decision rules and the design criteria established in this study are therefore logical. A comparison between the two sets of 'rules' could therefore be valuable. The DBSA decision rules take the form of a sequence of questions addressed at potential project developers, in order to address vital prerequisites required for the establishment of economically viable, socially sustainable development projects.

Given the political scenario during the 1980s and 1990s in SA, these questions were highly relevant, as economic development is influenced by political and economic policies. The aspects dealt with in the decision rules were designed to raise issues in a logical manner. The first eight criteria deal with macro issues in a fairly robust manner. The next set of criteria is dealt with at appraisal stage in a more detailed fashion. It is unlikely that projects will comply perfectly with all criteria and decision-makers were to decide on acceptable deviations.

Question 1: Is there a fit (reconciliatory aspect) between the objectives of the major participants?

The objectives of parties involved in a project (usually two or more), most often vary. Ensuring sufficient complementarity between the objectives of role-players is required. It was established in this study, as expressed in the project design criteria, that farmers differ significantly in their approach, as a result of differences in access to services and resources. A scientific description of homogeneous focus groups (with similar objectives) to facilitate focused and appropriate support is therefore needed. The project design criteria further emphasize the structuring of sound linkages that amongst other purposes, facilitates a forum in which complementarity of objectives should be achieved.

Question II: Is there a policy fit?

A project must fit the major player's (including NGO's) interpretation of policy. Especially operational "policy positions", i.e. on farming models, user charges, etc. should not differ. In the Strategic Plan for South African Agriculture this is addressed. It is argued that a pro-active policy stance is required, as subsidies are fiscally unsustainable. Services required are often interdependent and must be integrated. Stakeholders (credit institutions, input suppliers, processors, etc.), should be linked closely to producers (NDA, 2001b), again illustrating the importance of linkages as argued in the design criteria.

Question III: Is there a programme fit?

A project must fit the development programme of all stakeholders to ensure optimal linkages and multipliers in an integrated framework. This would eliminate duplication and promote co-operation. The same argument as in the previous question is relevant. The design criterion of facilitation of sound linkages between stakeholders is relevant to enhance acceptable development programmes.

Question IV: Is there evidence of market or government policy failure?

Market failures relate to situations in which markets for goods and services fail to be perfectly competitive. Governments often add to these distortions by initiating policies (i.e. protective tariffs or subsidies). When these measures to alter prices are inappropriate, insufficient, or excessive they causes more distortion, constituting government failure (Van Rooyen, *et. al.*, 2002). When markets operation is thus interfered with, market prices do not reflect economic scarcity values. A project should intervene in the economy only where market or government failure exists, aiming to remedy market failures. Government failure is mostly rectified at policy level. Imperfect markets often lead to inefficient or inequitable results and interventions could then lead to greater efficiency and equity. This aspect is not dealt with directly in the design criteria.

Question V: Which institution is the appropriate source of finance?

According to the decision rules, the public sector should fund operational/recurrent development costs, e.g. salaries, etc. However, partnerships with finance institutions and the private sector should be addressed: if commercial financing is available and appropriate, it should be accessed. The design criteria of stakeholder linkage facilitation and economic sustainability complement this.

Question VI: Who “owns” the project?

The project must have the support of the target group/s and be a priority. There must be ownership through participation and involvement by beneficiaries throughout the project cycle. It has been established in this study that one of the major causes of the failure of the project approach, has been the lack of ‘ownership’ of participants. This is therefore dealt with in the design criteria in terms of participation elements, technical aspects having to be reconcilable with social realities and human capital development.

Question VII: Who gets the benefits and who incurs the costs?

Although secondary players could also gain benefits through a project, the target group must predominantly receive benefits. Communities incurring unintended costs must be compensated. This is addressed with this question. In this study it has been established that while projects often resulted in higher yields, it did not result in an independent middle class small farmer and relatively few people benefited. The design criteria do not deal with this aspect specifically, although the linkage criterion addresses the structure of participant involvement so that all parties gain optimally.

Question VIII: Is the project financially affordable?

There must be budgetary provision. Project participant, borrowers, or farmers/small business should be in a position to sustain the operation and maintenance of the project. This decision rule is self-explanatory. Again the design criteria do not address this directly, but social and economic sustainability is dealt with.

Question IX: Do economic benefits exceed economic costs?

To achieve sustainable economic growth, the social benefits, derived from a project must exceed social costs. Therefore, all benefits and costs (including indirect aspects) must be described clearly. As part of the project cycle discussed in this chapter, the vital element of cost benefit analysis is stressed. The design criteria again highlight the importance of economic sustainability.

Question X: Are the project benefits sustainable?

The project must be financially, technically, institutionally, environmentally, socially and politically sustainable. Benefits must be distributed fairly to ensure that equity considerations are met and the implementation of the project can be sustained through participation. This is supported by the major findings of this study, as refined in the design criteria, specifically dealing with human capital development and sustainability.

Question XI: Is it the “best” alternative?

The project must be seen to be the optimal solution to the identified set of problems and objectives. Benefits and costs of alternative models should be compared to determine the optimal solution. This again forms part of project planning, implementation and analysis, as discussed in this chapter.

In summation, the first three questions of the DBSA rules aim to establish a common macro-purpose by scrutinising objectives, programmes and policies. A common goal is required for sound linkages and eventually a successful project. Projects should address market failure and this is dealt with in question four while question five deals with the source of finance in which government should have a specific role. Questions six and seven deal with the aspect of participation while questions eight and nine deal with financial and economic viability respectively. Question 10 deals with sustainability and 11 ask if the project is the optimal solution. Similarities between the design criteria proposed in this thesis and the set of decision rules developed by the DBSA, are specifically evident with regard to linkages between stakeholders, participation and sustainability. Whilst the DBSA rules focus on common ground between stakeholders, financing and financial/economic viability, the design criteria focus more on the sociological/development perspective.

The project design criteria proposed in this thesis do however raise a “new” issue. The aspect of quantifying diversity definitely deserves attention and this is being dealt with in depth. Furthermore, the importance of empowerment of rural communities through human capital development is given specific attention. Another aspect that is given priority is reconciling technical innovation with social reality. The level of technological change used in a project, must be reconciled with the social fabric of the community involved. Aspects such as traditional values, tenure systems, literacy and education must be taken into account. Participative research within a farming systems context, could quantify these issues and the specific role of agriculture in a particular community. These aspects have an impact on any project and must be qualified.

3.4.4 Incorporating the proposed design criteria in the project cycle

It has been established in this study that project failure in the past resulted to a significant extent from insufficient attention to proper implementation and recognition of social reality. To rectify many of the failures experienced with projects, the guidelines of the project cycle should be implemented effectively. More importantly, the project cycle should incorporate this study's project design criteria which specifically address social issues, human capital development and linkages. A particular focus should be addressing economic diversity in a community where a project is planned. A typology to describe homogeneous farmer types, to facilitate needs-based support is a adaptation proposed with this study. These adapted project cycle guidelines must however be implemented effectively. It is argued that if these guidelines are incorporated in project planning and implementation, projects would contribute to agricultural growth.

During the **project identification stage**, diagnostic surveys and constraints analysis results in the identification of priority problems, which may lead to a potential project. A description of social realities and how technical innovations could impact on these should form part of this phase. Potential role-players could be identified and the complementarity between the objectives, policies and programmes determined. How co-ordination could be structured and linkages optimised should already be investigated, especially in terms of how institutional aspects would be dealt with (see table 3.4.1). A preliminary investigation into economic diversity of the community and possible support measures for different groups should form part of this phase.

During the **preparation phase** (consisting of a pre-feasibility study and a more detailed analysis), objectives are more clearly defined and alternatives investigated. The project 'fit' to the objectives, programmes and policies of all stakeholders (including farmers) as well as co-ordination and linkage mechanisms is analysed thoroughly. Project 'fit' is determined as part of "screening" of alternatives: The criteria dealing with technical, financial and economic viability, compatibility with existing production systems and resource use patterns, as well as social/cultural considerations are to be taken into account to determine the best 'fit'. Especially in terms of the technical and institutional aspects (table 3.4.1) the feasibility of a project needs to be determined. How participation and empowerment is to be structured, the appropriate funding agent and sustainability should also be dealt with. A more in depth investigation into the diversity within the targeted population should also be attempted. During this analysis, the determination of a farmer profile through a typology would be of significant benefit in quantifying economic diversity through determining the role of agriculture in the household.

During the **appraisal phase** of the project, a detailed report on the analysis dealt with in the preparation phase is evaluated. An independent team conducts a critical review of all aspects of the report. This team should engage with potential project beneficiaries as well as with other stakeholders, to determine the conditions for sustainable implementation and project impact. It may recommend further preparation work. The analysis of diversity should during this phase result a functional typology of farmers. A thorough description of social reality and the link with proposed technical innovation should also be

completed while the particulars of linkages and co-ordination should be spelt out. Strategies for human capital development must also be specified. An thorough investigation of the social, commercial financial, economic and environmental aspects is also required (table 3.4.1).

The **implementation phase** requires rigorous analysis throughout, in order to maintain a realistic project management plan. Implementation is usually subdivided into an investment period of 2-5 years during which major fixed investments are made; a development period, with monitoring of activities and with adjustments as required. During this phase it is again vital that co-operation and linkages as well as participation remain on the forefront. Especially during monitoring of project activities, which should be an integral part of the project cycle, all the design criteria should be evaluated.

During the **evaluation phase**, that could take place at any stage, or after completion of the project, an independent evaluation team measures success, evaluating all aspects from the technical to the environmental (table 3.41). This determines the extent to which original objectives and specifications are met. Impact assessment analyses the results of projects, both intended and unintended, and the effects, positive and negative on society. Again the design criteria could be used as indicators of success or failure. How the proposed project design criteria fit the project cycle is illustrated in table 3.4.1.

Table 3.4.1: A summarised description of the role of project design criteria in the project cycle.

Evaluation module	Relevant design criteria	Actions to be taken
Technical: Inputs and outputs of goods and services	Linkages/co-ordination	Local forum facilitating integration Infrastructural arrangements
Institutional: Appropriateness of institutional setting – accounting for culture	Co-ordination structuring: Compatible objectives, policies, participation & HCD structuring, diversity investigation – typology	Consultative forum Typology development Inclusive project management Structured study groups FSR-E projects
Social: Resource and income distribution; employment, equity & quality of life	Participation, HCD Technical/social compatibility Equity, diversity & sustainability Linking a typology to appropriate support	Inclusive project management Study group approach Livelihood analysis/typology arrangements Project planning
Commercial: Product demand, price effects, input supply	Linkage with markets	Market analysis Co-operation/integration Adaptive & on-farm research
Financial: Effects on participants, corporations, etc.	Technical vs. social aspects	Farmer budget Organisational accounts
Economic: Broad impact of public sector investment	Technical vs. social aspects Compatible objectives/policies HCD	Comparing alternatives CBA Public-private sector co-operation
Environmental: Biological & physical environmental impacts	Sustainable resource use	EIA, livelihood analysis, CBA, etc Adaptive & on-farm research Study group programmes

Note: These aspects are to be dealt with during all phases of the project cycle, including the identification, preparation, appraisal, implementation and evaluation phases.

3.4.5 Conclusions

Tomlinson, during the 1950s, proposed the facilitation of access to resources and services (through a project approach), to empower small-scale producers. While an environment conducive for a viable small-scale sector is finally developing early in the next century, this has yet to benefit resource-poor producers.

However, innovative support strategies are required as access to services is inhibiting economic growth. It is hypothesised in this study that a project approach that specifically deals with economic diversity and integration of role-players in the sector to address high cost would constitute such a strategy. It was further established that specific aspects should be addressed: The project cycle should be extended to include the project design criteria condensed from lessons learnt. This includes facilitating linkages, co-ordination, participation, classification and empowerment through human capital development.

In this model, top-down weaknesses are eliminated, inputs from beneficiaries are valued, local knowledge is incorporated and commitment, sustainability and utilisation is enhanced. Participatory planning and development is a fundamental building block for sustained growth. Participation of beneficiaries at all stages of the project cycle is critical to ensure success. Project planning must accommodate this. With the proper attention to detail, noting the lessons from previous failures, sound policy and institutions, projects should be viewed and could indeed be used as the “cutting edge” for development in the agricultural and rural environment. One condition would be rigorous implementation of the proposed project planning and implementation cycle, and a focus on institution building to ensure the sustained implementation of this cycle.

Although many of the elements isolated have been highlighted separately in a variety of studies over the past decade, the compilation of these principles into project design criteria constitutes a significant shift in development strategy. Engaging effectively with a developing community to facilitate a participatory determination of constraints, farmer types and objectives per group, should form part of project development. The integration of farmers into study groups, based on respective farmer types in a typology, facilitating human capital development and confidence, as well as real integration with a number of stakeholders, including private interests, will be a relatively new approach in South Africa.

Whilst economic growth is an important aim of any agricultural project, it is accepted that achieving this aim does not inevitably lead to improvement in living conditions for all in a project area. Whilst a project can, and in the past has caused disparity, despite of overall growth, incorporating the project design criteria would reduce this risk. Although addressing diversity and transaction costs specifically would not ensure success and equitable growth, it would enhance a project's potential to do just that, especially when this is enhanced through sound institutionalisation of the approach.

CHAPTER FOUR: A METHODOLOGY FOR INTEGRATED AGRICULTURAL PROJECT PLANNING

4.1 Introduction

The purpose of this study is to prove that support based on a redesigned project approach, an intervention to facilitate access to support services and resources for committed groups of farmers, as part of participative planning and management should still be a productive instrument in agricultural development. In this chapter a comprehensive methodology for project planning, implementation and evaluation will be described. This methodology will include adaptations proposed to deal with economic diversity. The project design criteria identified in the previous chapter will form part of the project design, appraisal and implementation methodology dealt with. A framework for successful planning and evaluation of the project approach is therefore developed in this chapter. Such a framework is crucial as policy demands sound allocation of public resources, emphasising equity, efficiency and accountability (Anandajayasekeram *et. al.*, 1996; Wessels, 1998; Marasas, 1999). Impact assessment deals with comparing the situation of a project and a 'without scenario', to determine incremental net benefit, to facilitate planning, restructuring and problem identification. Impact implies movement towards defined objectives, necessitating criteria for evaluation. Defined targets, procedures, goals and indicators, determined in advance, are such criteria (Gittinger, 1982).

However, the relationship between an agricultural project and its impact on participants and society is complex. Benefits are often derived from a combination of complementary investments and actions over time. No single analytical method can capture all potential benefits and costs (Anandajayasekeram *et. al.*, 1996). Different enquiry systems are therefore required to comprehensively analyse developmental problems. The traditional Leibnizian approach requires that only data needed for formal models be collected. With the Lockean system, the point of departure is that models are developed from facts, exposed through empirical data. A feature of Kantian investigation systems is combining empirical data with a theoretical model, as used in the cost-benefit approach. In the Singerian approach a holistic view features and a variety of methods are used (Mitroff & Turoff, 1975) as quoted by Van Rooyen (1983). A quantitative approach is formalised and controlled with its range clearly defined. Quantitative studies emphasise measurement and analysis of causal relationships between variables, not processes. For sensitive issues this can create suspicion and generate misleading information (Chambers, 1994), somewhat limiting its use. In many cases resource poor farmers have no clear concept of quantitative measuring tools, further limiting their use. In contrast the qualitative approach has less strict procedures and a more open range. It implies emphasis on processes and meanings with less focus on measuring quantity, intensity or frequency, stressing the socially constructed nature of reality. In the light of this philosophical perspective, a combination of qualitative and quantitative enquiry systems is used to ensure a viable, comprehensive perspective in the impact assessment of the Sheila project.

4.2 A comprehensive impact analysis framework

This study proposes a comprehensive project approach that will facilitate access to resources (inputs, credit, etc.) and services (management, empowerment, etc.). It argues that resources utilised accordingly have optimal impact.

The Sheila project, one of the first and most extensive examples of a development project in the North West Province, is the selected case study. Its assessment will illustrate that the approach could be an economically viable investment with potential for the future, especially if realigned with the adaptations proposed.

A systemic analytical procedure is used, since a significant number of factors need to be recognised. These include infrastructural; social; enterprise; economic; political and cultural aspects, combining knowledge from various fields. A combination of complementary qualitative and quantitative enquiry systems is used to ensure such a holistic perspective.

Analysis before an activity (*ex-ante*) or after its completion (*ex-post*) differs in purpose. Ex post assessment evaluates impact, provides feedback and establishes accountability and credibility (Anandajayasekeram *et. al.*, 1996). With the *ex post* evaluation of this study, the criteria applied at Sheila will be determined. In essence, the various types of costs and benefits of the project will be established.

The farmer-types described through a typology will consequently be subjected to a logical framework analysis (LFA); as part of an *ex ante* impact study, describing strategies for each type based on the project approach. These strategies will be evaluated as base for support recommendations. An appropriate institutional structure for projects will also be described. This chapter is summarised in a table, describing the different criteria, the evaluation methods used as well as the data required for analysis.

A thorough impact of the Sheila project since 1976 (*ex-post* analysis) and an (*ex-ante*) analysis to determine the impact of the proposed strategy is dealt with. The analysis framework is graphically illustrated in figure 4.2.1. It evolved from a series of impact assessment assignments pioneered and applied in the analysis of a range of developmental issues in agricultural and rural situations within the South African scenario (Van Rooyen, 1986; Anandajayasekeram, *et. al.*, 1996; Wessels, 1998; Marasas, 1999; Esterhuizen *et. al.*, 2001; Esterhuizen *et. al.*, 2002). The process is also described in a South African Training Manual developed for development practitioners by the Universities of Ghent and Pretoria, in collaboration with the Agricultural Business Chamber, namely Agricultural Project Planning and Analysis (Van Rooyen, *et. al.*, 2001).

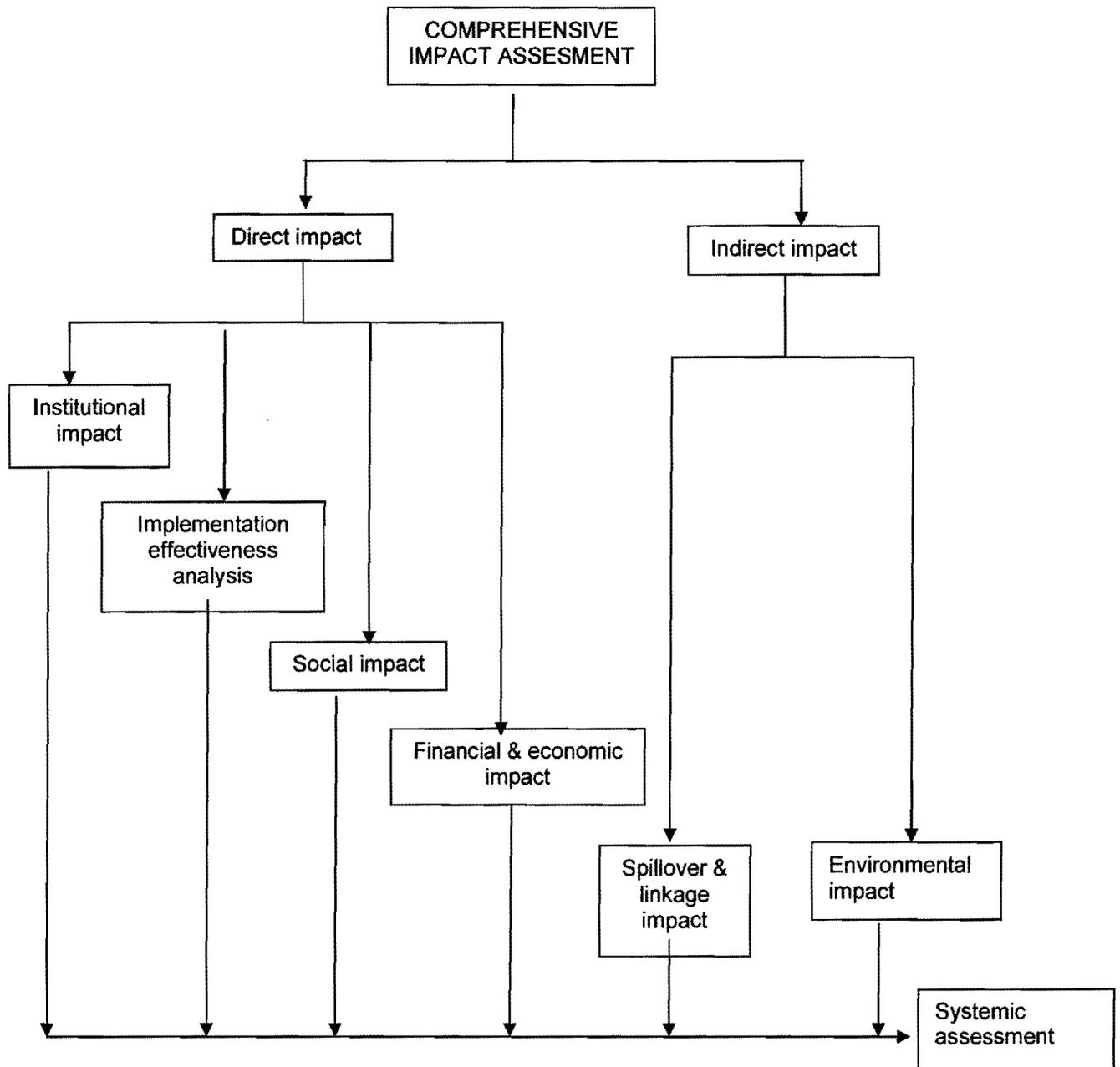


Figure 4.2.1: Framework for Impact analysis of the project approach at Sheila:

The direct impact of a project as illustrated in figure 4.2.1 includes primary benefits and costs, which entails institutional and stakeholder effects. Institutional impact deals with institutional change and changes in the enabling environment (input supply, infrastructure, etc.). Social and financial impacts essentially describe the incentive to participate. Effectiveness of the project in terms of goals attained is determined with an implementing effectiveness analysis; i.e. logframe. These and the indirect effects of the environment and linkages will be assessed qualitatively. Financial and economic impacts are assessed quantitatively. A systemic impact assessment using key questions summarises all impacts. According to Gittinger (1982), project analysis can be divided into six aspects: Technical, institutional, social, commercial, financial and economic aspects. All are addressed in the framework proposed.

4.3 Direct project impact

According to Van Rooyen *et. al.*, (2001) the direct impact of an agricultural development project describes the concrete institutional, financial and social implications directly attributable to the project. These derive from primary benefits and costs generated through the project intervention. Another description of direct impact is the net added value of goods and services due to the project. This would typically include effects such as improved yield and usually occur when a behavioural change is evident, resulting in effects on income, etc. (Van Rooyen, 1986). Direct impact assesses performance, measuring the degree to which the project has achieved the desired objectives (Anandajayasekeram, *et. al.*, 1996). The various forms of direct impact are discussed below:

4.3.1 Institutional project impact

Institutional impact forms a vital aspect of this investigation, as an efficient support services structure is highly relevant and effectively the theme of this study. This impact deals with change in organisational arrangements and services structures, funds, procedures and participation required to deliver the net added value of goods and services directly attributable to the project (Wessels, 1998). Having the institutional capacity to conduct a project is vital (Anandajayasekeram *et. al.*, 1996). With this study the changes in institutional capacity will be determined using trend analysis. Specific attention will be given to how linkages between stakeholders, participation and HCD are institutionalised, in accordance with the design criteria. Aspects such as the support services and tenure system, the role of CBOs and relevant authorities, the responsibilities of stakeholders, linkages between these stakeholders and general aspects of management will be investigated. For the *ex ante* situation, proposed services will be evaluated.

4.3.1.1 Institutional change

Institutional change describes the changes occurring in managerial arrangements and the 'rules' which guide project actions: In this analysis institutional change therefore entails all managerial, procedural, administrative and organisational actions introduced to facilitate implementation of the project. Programmes initiated to facilitate extension, access to information; input and output markets as well as training programmes constitute typical institutional impacts. The design criteria dealing with the structuring of co-ordination, complementarity of objectives of stakeholders and linkages will specifically get attention. Other criteria involved are how participation and human capital development are structured as well as the recognition of social reality. Information was gathered through a variety of methods including group discussions, interviews with key informants, a questionnaire and secondary data.

4.3.1.2 Changes in the enabling environment

The physical environment of the area in which a project operates is often adapted to facilitate effective implementation. This might include infrastructure changes such as access roads, buildings, mechanisation services etc. These physical changes to facilitate services will be analysed. Also investigated will be policy changes to facilitate project implementation. This could include subsidies, grants and marketing channels. This type of information was gathered through a variety of methods including group discussions, interviews, a questionnaire and the literature. Criteria involving the sustainability of the changes in the environment and how research was accommodated will also feature.

Project scale is a key variable in terms of the changing environment. Economies of scale are a function of demand for the product of the project, the resources required, the capacity of participants and changes in these factors over time. Cost saving aspects of economies of scale must also be recognised. The size of a project and that of individual holdings are key economic decisions that are often overlooked, or taken as a given. This has cost implication, but often depends on the political environment and technical realities. Often it is prudent to start a project relatively small, while subsequent managerial and technical capacity building, infrastructural and labour development, could lead to expansion (Van Rooyen, *et. al.*, 2001).

4.3.2. Project Effectiveness

A commonly used approach for assessing the direct product of a project is known as effectiveness analysis. This analysis describes a comparison of goals with actual achievements of a project, i.e. how effectively the various goals and objectives were achieved. This requires clear objectives and quantifiable standards (Anandajayasekeram *et. al.*, 1996; Wessels, 1998). The expected effectiveness of proposed strategies could also be determined by an *ex ante* analysis.

A tool for effectiveness analysis is the 'Logical Framework Analysis' (LFA) approach (Van Rooyen *et. al.*, 2002). The LFA permits assessment of the degree to which the project has made changes in the desired direction. The framework itself is a four by four planning matrix summarising information required in the design or evaluation of a project. It provides a structure specifying components and linkages between a set of means (inputs and activities) and a set of ends (outputs). It renders assessment transparent by explicitly stating the underlying assumptions of the analysis. It states why a project was (or will be) carried out, what and how it was (or is to be) achieved, where the data required could be obtained, which external factors are (were) crucial and their cost. The LFA places a project in the framework of constraints, objectives and development context. The relationship between problems, objectives, etc., is presented systematically, requiring thorough, participative analysis. The LFA is a tool for planning, monitoring and evaluating projects based on logical deductions. It is also useful in linking projects (micro level) to the context of development programmes and national goals (macro level) (Van Rooyen *et. al.*, 2002).

LFA as a planning technique was developed by several institutions simultaneously over the past 30 years and is popular today with a range of international agencies such as the EU, the World Bank, the SADC and many donors. LFA aims at analysing, planning, implementing and evaluating development interventions to improve quality. It is a systematic approach, facilitating improved communication and information capturing. Its participative nature and the experience and skills of participants are both vital and beneficial in the application of LFA. It facilitates logical, structured and formulated thinking and standardised presentation. It can be used to foster commitment to structured, participatory and flexible projects and as tool for dialogue regarding development issues. However, LFA has limitations and is only a tool. It facilitates description of interventions in a logical manner to improve the manner in which ideas are formulated and its expression in a clear, standardised way, and has no application beyond that. Applied within bad policy or when using the wrong criteria, LFA will highlight incoherence and shortcomings but it will not result in better policy or produce different criteria. Both its quality and results depend on its users, on that of the surveys, on the accuracy of data and the commitment of those representing the groups concerned. The method is particularly useful to interventions such as technical and investment projects serving economic development and/or social ends (Van Rooyen *et. al.*, 2001).

For the *ex ante* effectiveness analysis, problem analysis through the 'problem tree' approach will be used (Anandajayasekeram *et. al.*, 1996; Wessels, 1998; Van Rooyen *et. al.*, 2001). This entails a participative, analytical process to identify problems and will form the basis for problem solving and project design. A participative, informal structure of discussion to share information, identify constraints and derive solutions will be followed. During the analytical phase participants define problems that are written out on charts and displayed. After checking for duplication and reformulating unclear cards, they are arranged in a cause-and-effect linkage, resulting in the 'problem tree'. Subsequently, by changing the negative states into positive states and by arranging these in groups reflecting the activities-ends linkages, the problem tree turns into an 'objective tree'. When participants accept these trees as correct and complete, the criteria will be used for 'strategy analysis' to select the objectives which will constitute the planned intervention. During strategy analysis, pooling of associated objectives takes place to identify strategies. The next step is the planning phase which aims at setting up a logical framework (logframe), in the form of a summary matrix:

	Intervention logic	Objective/Verifiable Indicators (OVI)	Sources of verification	Assumptions
Goal/Vision	Improved income	Measure of goal achievement	Sources of info Methods	
Project Purpose	Improved?	End of project status	Sources of info Methods	Assumptions affecting output-purpose linkage
Outputs/Results	Reliable service	Magnitude of output Planned completion date	Sources of info Methods	Assumptions affecting input-output linkage
Inputs/Activities	Build/supply/.	Nature & level of resources, starting date	Sources of info Costs	Initial assumptions

Column one represents the project's INTERVENTION LOGIC, derived from the objectives tree. Column two represents the OBJECTIVELY VERIFIABLE INDICATORS that describe the goal, purpose and

outputs in operational terms, i.e. quality, quantity, place and time. Column three represents the SOURCES OF VERIFICATION that indicate where and in what form information may be obtained to verify results. It also includes the COST of resources needed to carry out the activities. Column four represents ASSUMPTIONS or external factors over which the intervention has no direct control but which are crucial in achieving the results, purpose and goal. The intervention logic comprises all stages within the (project) intervention, which need to be completed in order to achieve the goal: outputs are achieved through the activities, the purpose is realised through the outputs, and the goal is reached via the purpose. The LFA facilitates transparency by stating assumptions, checking hypotheses and expected results; it deals with a number of social goals and does not reduce benefits into one figure. It is understandable to non-scientists – facilitating decision-making and allowing for flexibility (Van Rooyen *et. al.*, 2001).

4.3.3. Social impact

This impact describes the impact of a project on the people involved in terms of so called 'winners and losers' or diversity impacts as a result of the project. Since this study is focused primarily on the effects of the project on participating and non-participating farmers as well as project agents, the broad term, people level impact is also applicable. Having indicated that ignorance of social aspects has previously been the downfall of many projects, social impact determination is a priority. It deals with the influence of the project on participants in terms of quality of life: income distribution, job creation, security considerations, changes in knowledge or skills, nutrition, etc. Change in practice also constitutes a social impact. These impacts are often difficult to measure, but should be identified and if possible quantified. Social impact reflects the ultimate distribution of benefits and costs within society and its groupings. It includes changes in attitudes, resource use patterns and distribution, status, institutional implications etc. Socio-economic surveys are generally used to assess this impact but as it is often difficult to attach a weight to social considerations, a qualitative approach can also be followed (Van Rooyen, 1983; Anandajayasekeram *et. al.*, 1996). Both questionnaire data and a qualitative approach will be used in the case study. The design criteria that will be dealt with in this section are that technical aspects must be reconcilable with social realities, how co-ordination is structured, how diversity is quantified and human capital development recognised.

A description of diversity in an agricultural community together with recorded and expected social changes, provide a clear indication of intervention impact. Such trends will be used to describe the social impact of the project approach at Sheila. The use of a typology acknowledges and describes rural diversity, highlighting the constraints of each type or group. It effectively links development to social diversity and is a useful policy and development tool. It must be recognised, however, that a typology is a static representation with a shift between types within the typology possible (Laurent *et. al.*, 1999). A representative typology of farmers active in the area, to identify groups within the agricultural community, will form the basis of the social impact analysis. It will describe the diversity of farm units within the local environment. This typology will be based on the role of agriculture in the household. For types

determined within the typology, LFA will be conducted to analyse the situation of particular farmer types. Problems and strategies will be elaborated. This *ex ante* analysis, based on a problem solving approach, will be used to estimate the impacts of proposed recommendations.

4.3.4. Financial and economic impact analysis

A basic financial analysis is a description of financial flows through an evaluation of costs, subsequently resulting in (income) benefits. Particularly cost, yield and price data are evaluated. Budgets that describe costs (inputs, etc.) and benefits (yields, prices) will be compiled. This analysis will also access resource use, incentives, financial planning and management (Anandajayasekeram *et. al.*, 1996; Wessels, 1998). For the *ex ante* evaluation, expected financial values will be used.

Financial analysis as used in this study refers to a cash-flow analysis from which past and future expenditure and income are calculated to determine financial feasibility of the project. Analyses are done at market prices. This provides an indication of the pressure the project will place on the exchequer, i.e. the fiscal requirements and degree of subsidisation required. Financial analysis usually starts with representative farm models. Based on patterns of representative farms these models generate enterprise (crops and livestock) budgets to compare the situation "with-the-project" to that of "without-the-project". Current prices are used, depreciation and non-cash items are included, but off-farm income is excluded (Van Rooyen *et. al.*, 2001). Data will be collected from literature and through a questionnaire. Again, the principles or design criteria that will be guiding this analysis, deal with human capital development, participation and financial viability.

Since resources are always limited, an important consideration is to find optimal combinations through which net benefit can be optimised. This analysis determines the economic efficiency of resource use at a project, meaning that benefits and costs are evaluated at prices that reflect relative scarcity of inputs and outputs. These prices represent opportunity costs and reflect actual economic value. In perfect conditions, market prices are the best criterion upon which allocation of resources can be based. However, markets are seldom perfectly competitive and supply and demand does not always determine prices. Product market and services prices do not reflect actual economic value (scarcity value) when government interferes in markets through for instance tariff protection, taxes or subsidies.

When market operation is interfered with, for example by restriction or stimulation of supply or demand, or by price interference (through policy or market failure or both), market prices do not reflect economic scarcity values and the use of shadow prices becomes necessary (Van Rooyen *et. al.*, 2001). Economic analysis is therefore used to determine whether a project is likely to contribute to the broader economy and if this contribution is large enough to justify the use of scarce resources. It deals with situations where markets do not accurately indicate benefits and costs. According to Gittinger, 1982 and Van Rooyen, *et. al.* (2001), economic analysis differs from financial analysis in that:

Economic values/prices reflecting true social and economic values are used (shadow prices).
Tax is not subtracted from income, as it is not a cost item for the broader economy but a profit.
Subsidies are seen as a cost to the economy and i.e. sales tax is subtracted.
Interest on capital is seen as a profit for society and the economy and not a cost.
Household consumption is recognised in economic analysis.
For labour cost the lost value of the best alternative is used.
The value of production forfeited in the without project situation is included as opportunity cost

Economic impact can be traced through its effect on production and income. It compares the benefits to society from a project and the costs incurred; i.e. efficiency analysis, to be done *ex-ante* or *ex-post*. *Ex-ante* methods are useful as planning tools as they aid in selection and resource allocation. *Ex-post* studies are useful for justifying and demonstrating the payoff of investments. A simple technique such as a partial budget and cost benefit framework can be effectively used to estimate ROR of projects. In general it is accepted that all secondary effects would be captured through the application of economic shadow pricing of all direct project benefits and costs (Van Rooyen *et. al.*, 2001).

The cost-benefit approach (CBA) assesses whether stakeholders have (or had) sufficient incentive to invest in a project (Van Rooyen, 1986). CBA traces resource flows, identifies and values costs and benefits and compares these with a without project situation - the difference being incremental net benefit (Gittinger, 1982). Advantages of CBA include systematic evaluation, comparison of economic values and opportunity to consider managerial implications. Limitations are the large informational and time requirements, the many fixed assumptions and the possibility of manipulation. CBA can be misleading if vital costs or benefits are overlooked or wrongly estimated, or if dubious data are included. Difficulties centre on identifying relevant data and choosing value indicators. Externalities and environmental issues must also be recognised (Gittinger, 1982; Van Rooyen, 1996). CBA is an aid to decision-making about resource use and rates of return (Tisdell, 1985). All project effects cannot be quantified through CBA. It therefore forms part of a more comprehensive assessment. The design criteria to be recognised in economic analysis deal with the questions of the efficiency of linking social reality to technological change, the institutionalisation of linkages, participation and human capital development.

Step one is to identify the technical inputs and outputs for a proposed investment, step two to value inputs and outputs at market prices to construct financial accounts, and finally, step three to adjust financial prices so that they reflect economic values better. Relevant direct costs and benefits are valued at realistic, economic (shadow) prices. International prices for traded items and the 'willingness to pay' for non-traded items are normally used for valuation. Shadow prices should be determined through the application of economic principles so that different project evaluators achieve the same results. The valuation of factors such as water, land or labour rest on the principle of opportunity cost; i.e. the economic value of production lost should it be withdrawn from the most economic alternative and employed at the project. Where benefits accrue over time, a discount rate must be used for comparability.

To deal with inflation, its rate is subtracted from the selected interest rate to give the 'real' discount rate (Gittinger, 1982; Van Rooyen, 1986; Van Rooyen, *et. al.*, 2001).

Financial prices are adjusted to reflect economic value (opportunity cost) in three steps (Gittinger, 1982): adjustments for direct transfer payments entailing shifts in claims to goods/services from one entity to another. Four are common in projects: taxes, subsidies, loans and debt service. The second step entails adjustment for distortions in tradables: the opportunity cost of a least cost, sustainable alternative is the farm gate price, i.e. calculating export/import parity prices by respectively adjusting c.i.f. (cost, insurance and freight) or f.o.b. (free on board) prices by relevant charges between the farm gate and where the price is quoted provides export/ import parity value. The final step entails adjustments for non-traded items: for bulky goods or perishables the market price is used if it reflects its value - if not, the 'willingness to buy' concept is used. Non-tradables are products for which the import price is higher than the cost of local production, but this cost is also higher than the world market price. Goods can therefore not be traded at a profit.

Shadow prices should reflect the real economic value of resources for the region where they are purchased. It is therefore necessary to recognise political influences as they underlie the nature of community benefits. As example, the value of capital; market prices; job opportunities, wages, externalities (i.e. damage to the ecology); and income distribution is relevant. Political consideration therefore constitutes an integral part of decision-making and must be accounted for when assessing any project (Van Rooyen *et. al.*, 2001).

4.4 Indirect impact

The true value of a project should be measured in terms of its contribution to the local economy (Van Rooyen, 1983). Indirect effects include all impacts stemming from (forward) and induced by (backward) linkages with other sectors in the economy, e.g. increased activity in supplier and processor sectors. This includes employment creation, scale effects and other spillovers. It entails all costs and benefits related to collection, value adding, distribution and supply of direct products, including quantifiable and non-quantifiable (intangible) effects such as changes in quality of life and attitude. Theoretically, indirect effects related to income generation and employment outside the project do not need to be included in an assessment in a perfect market, as price mechanisms would enable calculation of all impacts as direct (Gittinger, 1982; Van Rooyen, 1986). In reality, however, the economy does not function in a perfect world. Due to distortions indirect effects must be accounted for.

4.4.1 Spillovers and linkage impacts

In a closer analysis, procedures and technologies used in the project approach usually have wide applicability. In most cases improved access to services does not impact on project participants only. If a technology or procedure makes economic sense, the project acts as demonstration. If the financial status of participants changes, they will invest in the community, through expenditure. Many project effects will thus impact on farmers and other inhabitants in neighbouring areas and even further afield. Agricultural activity often has many linkages and spillovers into other sectors and communities, as described in chapter two. Specifically in terms of agricultural projects, a large number of employment opportunities are usually created. These aspects will be evaluated at the Sheila case study.

Benefits and costs are often intangible, making them difficult to quantify and to allocate a money value to. Almost every agricultural project has intangible costs and benefits. These include benefits such as improved quality of life, less stress, improved confidence etc. It may also include creation of job opportunities, better health and reduced infant mortality as a result of more clinics, better nutrition, reduced disease etc. Such intangible benefits are real and reflect true values. They do not, however, lend themselves to easy valuation.

Because intangible benefits are a factor in project selection, it is important that they be carefully identified and, where at all possible, quantified (Gittinger, 1982; Van Rooyen *et. al.*, 2001). Relevant data was collected from the literature, the questionnaire and qualitative discussions. Design criteria to be dealt with in this section are linking social reality to technological innovation, human capital development and sustainability.

4.4.2 Environmental Impact Assessment

Agricultural technologies can have both positive and negative effects on the natural environment and an impact assessment should consider these externalities, preferably prior to decision-making. Environmental impact assessment is designed to identify and predict the impact of an action on the biogeophysical environment and on man's well-being, and to interpret and communicate information about these impacts (Munn, 1979). This should be based on an understanding of physical and biological effects. Environmental impact assessment (EIA) should be an integral part of project planning and is becoming increasingly important due to concerns for ecologically sustainable development. Exclusion of EIA may affect the accuracy of estimates of a project's value. However, if such externalities were positive and substantial, the case for public funding would be stronger (Van Rooyen *et. al.*, 2001b).

In order to quantify and value the environmental impact of an agricultural initiative, it is important to understand the source, nature and relationships of an impact and variables that can affect current and potential producers and consumers. An environmental impact assessment should contain a description of the proposed actions, prediction of the nature and magnitude of environmental effects (both positive and negative), and an identification of human concerns. These predictions will often be uncertain, but the degree of uncertainty should be indicated in qualitative terms at least. The probably adverse consequences of any development must be weighed against estimated socio-economic benefits, and the areas of human concern for each proposed action (Van Rooyen *et. al.*, 2001b).

In the system used in this study, indicators are rated as being significant positive, insignificant, or significant negative. In the absence of data required for thorough analysis, it is still possible to identify the nature of the social costs and benefits, together with the gainers and losers. Environmental impacts should be assessed as the difference between the future state of the environment if the action took place and its state if no action occurred. The probably adverse consequences of any development must be weighed against estimated socio-economic benefits, and the areas of human concern identified for each proposed action (Van Rooyen, *et. al.*, 2002). The prediction of negative environmental side effects does not necessarily mean that the new technology should not be used. The net benefit may be sufficiently large to provide compensation to those who are harmed and still leave a net surplus to the society. This is often a policy question that needs to be addressed.

Environmental impact analysis has a significant degree of inherent uncertainty due to the natural variability of the environment and inadequate understanding of the behaviour of this environment. For a proposed project, the environmental assessment should at least include a prediction of the nature and magnitude of effects (positive and negative); a listing of indicators whereby effects can be monitored and the human concerns involved. The level of detail depends on the sensitivity of the affected environment and the extent of the impact; the scale of the proposed technology; scientific expertise and time available (Van Rooyen, *et. al.*, 2002).

4.5 Qualitative, systemic impact analysis framework

In chapter three a series of 'Decision rules' developed by the DBSA, with the aim of analysing development projects were discussed as part of an evaluation of critical aspects of the project approach. These 'Decision rules' are used to promote consistency and accuracy in determining efficiency, equity and sustainability in a user-friendly way. A comparison with the project design criteria developed in this study established a series of similarities. The original motive for the DBSA's decision rules was to introduce economic logic to project appraisal and allow for rational allocation of scarce resources. In the chapters of this study dealing with the case study, the decision rules will represent a qualitative framework of analysis, as a key part of the Impact Analysis. The series of sequential questions designed to raise critical issues in a logical manner will actually form the final part of the study's impact analysis, as it provides an overview of the intervention. This framework will be used to effectively summarise the comprehensive analysis. The key criteria will be used in support.

Table 4.5.1: A summation of the 'decision rules' developed to facilitate project analysis and the project design criteria, used as a qualitative framework for project analysis.

DECISION RULES	DESIGN CRITERIA
All role-players' project objectives must be complementary A programme fit for all stakeholders required Project must fit the policies of all stakeholders The intervention must address a government/market failure An appropriate financing agent must be identified Participants should eventually own the project Gains from the project must be quantified The project must be financially affordable The project must be economically efficient Benefits must be sustainable The project must be established the best alternative	Technical innovations must be reconciled with social realities Economic diversity must be dealt with through a typology Co-ordination and linkages (integration) must be structured. Ongoing participation and HCD must be facilitated

4.6 Data collection

4.6.1 Data collection procedures and verification

Gathering data in a diverse rural community, relatively soon after the political change in the early nineties, was complicated. A thorough process of information gathering was followed, as information gathered solely through a survey, without a relationship being forged between the parties first, could have led to misleading results. After all available secondary data was studied, interviews with key informants from the previous and current support services were held. Through their intervention, the analyst was introduced to the community and its extension officers. This led to a three-year qualitative investigation that included participatory analyses and demonstrations through a Farming Systems Research (FSR) - project. The FSR approach was used as it deals with farmers' constraints, while its participatory methods facilitate a systemic view (Norman, 1993). It focuses on the household and addresses socio-economical issues, providing a context for collaboration (D'Haese, 1997).

4.6.2 The participatory learning and action (PLA) phase

As an important part of this study entailed qualitative, participatory procedures to understand and analyse livelihoods at Sheila, the reasoning for using this methodology and the philosophy, on which participatory analysis is based, is described.

Development scientists often have a restricted vision of the realities of rural life as it entails a complex environment in which agricultural and other activities are linked. A paradigm shift in development during the past decade, forcing scientists to focus on the 'human factor', hinges primarily on enhanced participation (FAO, 1990). Understanding farmers is critical for effective development, forcing a focus on participatory evaluation. Farmers must become part of development, making communication crucial and circumventing the problem of farmers being passive collaborators or onlookers (Ashby & Quiros, 1991; Chambers, 1992; Pretty & Chambers, 1994; Chambers, 1994; Botha, 1996). A hypothesis is that if farmers can be enabled to analyse their own situation, they obtain knowledge and are more committed to action. Participatory methods are powerful, valid and reliable when well facilitated and performed (Chambers, 1991; Schönhuth & Kievelitz, 1994). PLA forms part of a more balanced approach. In contrast with traditional methods, participants dominate proceedings in PLA; while the researcher facilitates, establishing rapport, enquires and facilitates using the methods (Chambers, 1991; Schönhuth & Kievelitz, 1994).

PLA is accepted as valid research methodology and is especially suited for gathering social and socio-economic information. However, the user requires a level of expertise or inclination towards social processes and mediation (Kumer, 1993; Van Vlaenderen, 1996) as the 'recipient mentality' cultivated over decades is difficult to overcome (Botha & Treurnicht, 1997). PLA focuses on behaviour and attitude,

which eventually determines action (Chambers, 1992; Chambers, 1993b; Chambers, 1994; Pretty, 1994). Regarding validity (closeness to reality) and reliability (consistency of findings), PLA has an impressive empirical record (Gill, 1991; Chambers, 1994). Reliable information can be obtained if certain criteria are considered, including persistent observation as well as peer and participant checking (Pretty, 1994; Botha & Treurnicht, 1997).

4.6.3 The questionnaire

Although questionnaires are accepted as an analytical tool in agricultural development, without sound preparation its use can lead to misunderstanding (Horton, not dated). To obtain the trust of the respondents is vital in ensuring that the data can be used with confidence. If questionnaires are needed, these should be short, conducted later in the process, and focused on a particular issue (Mascarenhas, 1991; Botha & Treurnicht, 1997). In this study, potential respondents were part of the investigation through the participatory PLA phase before the quantitative survey. The use of a qualitative approach (PLA) is valuable in describing the population and indicating the required sample size, as described by the FAO (1992). Data could be checked with the secondary data (literature), the PLA survey and direct observation over the period of investigation.

Specific and concrete questions could subsequently be used to validate data gathered. A survey could quantify farming systems and the problems experienced by farmers. As part of the data required for the comprehensive social, institutional, financial and economic analysis used a description of households, resources, household income, agricultural income, capital resources and institutional arrangements will receive attention. Open-ended questions are to be used to obtain numeric data regarding hectares planted, number of income sources, etc. Close-ended questions (i.e., multiple choice) and dichotomous questions with two alternatives (yes or no) are also to be used. The questionnaire focuses on specific aspects and takes roughly 45 minutes to complete. It was pre-tested and revised before implementation.

Data obtained with this questionnaire will be statistically analysed to obtain a description of the community involved, to isolate variables that determine diversity within the population and to quantify this diversity. Statistical analysis entails a quantitative description of a particular environment: an exact analysis of a sample to facilitate extrapolation to a wider situation (Van Ark, 1995). Statistical analysis is particularly necessary where considerable variation occurs, to determine how significant the results are. Variability introduces a degree of uncertainty into a conclusion drawn from those results. The investigator needs to be convinced that a repetition of the study would provide the same results (Cochran & Cox, 1957; Federer, 1955). Statistical techniques enable the researcher to infer his findings to the bigger picture; i.e. the region or province. As Van Ark put it: "In statistical inference, we are concerned with how to draw conclusions about a large number of events, on the basis of observations of a portion of them."

4.7 Methodology framework

In summary, table 4.7.1 describes the different impacts that will be determined, as well as the way in which this will be achieved. The design criteria are incorporated into the impact assessment methodology. A systemic procedure is used, since various factors needed to be recognised.

Table 4.7.1: A summarised description of the comprehensive impact assessment of the Sheila project (1976 to 2005), including techniques, procedures and design criteria used.

	Impact type	Objectives	Methodology	Info Source	Design criteria
1	Effectiveness analysis	Compare project goals & results for different farmer types	LFA	PLA, Lit, Experts	Technical vs. Social? Diversity dealt with? Co-ordination & linkages? Participation & HCD?
2:	Financial analysis	Compare B & C of farmer types	Farm budgets, CBA, IRR	Lit, Survey, Experts	Co-ordination & linkages? Participation & HCD? Diversity dealt with?
3	Economic analysis	Compare 'real' project C & B of farmer types	Economic CBA, IRR estimates	Lit, Survey, Experts	Co-ordination & linkages? Participation & HCD?
4	Social analysis	Changes in practice, skills, etc. of farmer types	Typology	Lit, PLA & Survey	Technical vs. Social? Diversity dealt with? Co-ordination & linkages? Participation & HCD?
5	Institutional analysis	Organisational changes – addressing farmer types	Trend analysis	Records, PLA, Experts & survey	Diversity dealt with? Co-ordination & linkages? Participation & HCD?
6	Indirect effect analysis	Linkages & spillovers changes	Interviews, trend analysis	Lit, PLA, Experts & Survey	Technical vs. Social? Co-ordination & linkages? Participation & HCD?
7	Systemic IA	Sequential, summarising key impact questions	DBSA framework	All the above	Technical vs. Social? Diversity dealt with? Co-ordination & linkages? Participation & HCD?

Note: LFA = Logical Framework analysis
 PLA = Participatory Learning and action
 Lit = Literature
 CBA = Cost-Benefit Analysis
 IRR = Internal Rate of Return