The Sustainability of Agriculture as a Development Tool in Namibia

A dissertation prepared in part fulfillment of the requirements of a Master of Philosophy in Environmental Science degree

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ABSTRACT

In order to address the inequitable distribution of land and to initiate socio-economic development amongst marginalised people in Namibia, the Namibian Resettlement Programme was introduced as a means of implementing land reform. There is a political, economic and social necessity for empowerment amongst many communities, however, land redistribution will not necessarily achieve this in the Namibian environment.

The cost of implementing this Resettlement Programme has been very high and the benefits accruing to the settlers have been limited. It is argued that a primary reason for the lack of success of the Programme is that its agricultural focus requires all settlers to become successful farmers in an exceedingly harsh natural and economic environment.

The sustainability of using agriculture is as a development tool in Namibia is assessed using certain environmental sustainability criteria. These were biophysical, economic, social, and political sustainability. Based on these criteria it is evident that Namibia does not have a comparative advantage in agricultural production and therefore should not promote agriculture as a means to achieve development. While the agricultural sector is already a significant employer in Namibia, there is limited scope for expansion of the industry and intensification of production is not sustainable because of the dry climate and associated low carrying capacity of the land.

There is a need for research into other sectors of the Namibian economy in which Namibia may have a greater comparative advantage and hence would be better placed to act as a basis for development programmes. The Namibian Government should be encouraging other forms of job creation, such as tourism, and providing support to entrepreneurs undertaking new enterprises in sectors of the economy where the people of Namibia can sustainably exploit a comparative advantage.

LIST OF ABBREVIATIONS

ALDEP	Arable Land Development Programme (Botswana)
ARAP	Accelerated Rainfed Agriculture Programme (Botswana)
CMA	Common Monetary Area (CMA)
CSD	United Nations Commission on Sustainable Development
CSO	Central Statistics Office
CSIR	Council for Scientific and Industrial Research
DTA	Democratic Turnhalle Alliance
DWA	Department of Water Affairs
EIA	Environmental Impact Assessment
EMU	Emergency Management Unit
EU	European Union
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product (See List of Definitions)
GNP	Gross National Product (See List of Definitions)
GRN	Government of the Republic of Namibia
GTZ	Deutsche Gesellschaft fur Technische Zusammenarbeit
ha	hectares
HDI	Human Development Index
MLRR	Ministry of Lands, Resettlement and Rehabilitation
MPhil	Master of Philosophy
N$	Namibian Dollar
NAU	Namibia Agricultural Union
NUNW	Namibia National Workers Union
NANGOF	Namibian Non-Governmental Forum
NDP1	First National Development Plan
NGO	Non Governmental Organisation
SACU	Southern African Customs Union
SADC	Southern African Development Community
SEA	Strategic Environmental Assessment
SMME	Small, Medium and Micro-Enterprise

SWAPO	South West Africa People's Organisation
TCCF	Technical Committee on Commercial Farmland
UN	United Nations
UNEP	United Nations Environment Programme
WCED	World Commission on Environment and Development
WEF	World Economic Forum
WTO	World Trade Organisation

LIST OF DEFINITIONS

Absolute advantage The advantage one nation has over another in the production of a commodity when the same amount of resources will produce more of the commodity in that nation than in the other.

Beneficiaries People who have been resettled as part of the Ministry of Lands, Resettlement and Rehabilitation's Resettlement Programme. Sometimes referred to as settlers.

Comparative advantage The ability of one nation (region or individual) to produce a commodity at a lesser *opportunity cost* of other products foregone than another nation.

Development The process of improving the quality of all human lives. Three equally important aspects of development are (1) raising people's living standards - their incomes and consumption levels of food, medical services, education, etc., through relevant economic growth processes; (2) creating conditions conducive to the growth of people's self-esteem through the establishment of social, political, and economic systems and institutions that promote human dignity and respect; and (3) increasing people's freedom by enlarging the range of their choice variables, as by increasing varieties of consumer goods and services.

Economies of Scale Economies of growth resulting from expansion of the scale of productive capacity of a firm or industry, leading to increases in its output and a reduction in its cost of production per unit of output.

Externalities Costs generated through the use of a resource which are not incurred by those who benefit from the usage of that resource.

Gains from trade The increase in output and consumption resulting from specialisation in production and free trade with other parties.

Gross Domestic Product (GDP) The total final output of goods and services produced by the country's economy, within the country's territory, by residents and non-residents.

Gross National Product (GNP) The total domestic and foreign output claimed by the residents of a country. Comprises GDP plus factor incomes accruing to residents from abroad, less the income earned in the domestic economy accruing to persons abroad.

Income per capita Total gross national product of a country divided by total population. Per capita income is often used as an economic indicator of standard of living and level of development. It, however, can be a biased index because it takes no account of income distribution and the ownership of the assets that are employed to generate part of that income.

Opportunity cost The cost of using resources for a certain purpose, measured by the benefit given up by not using them in their best alternative use.

Settlers People who have been resettled as part of the Ministry of Lands, Resettlement and Rehabilitation's Resettlement Programme. Sometimes referred to as beneficiaries.

Strategic Environmental Assessment (SEA) Systematic process of strategically identifying and evaluating the potential environmental impacts and issues of proposed policies, programmes and plans so as to ensure that environmental concerns are addressed at the earliest stage possible in the decision making process.

Sustainable Development Improving the quality of human life while living within the carrying capacity of supporting ecosystems.

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND TO NAMIBIA'S RESETTLEMENT PROGRAMME

Almost half the land area (44%) of Namibia supports some 4200 white commercial farmers while 43% is designated communal land and is home to 120 000 rural black households (Sullivan, 1996). This highly inequitable distribution of land was inherited by Namibia at independence in 1990.

The new, democratically elected, South West African People's Organisation (SWAPO) government considered this inequitable distribution of land to be politically unsustainable and a primary cause of poverty and social and economic inequality in Namibia. The government therefore initiated a programme of land reform which was necessary for socio-economic development (Werner, 1997). In September 1990 the Ministry of Lands, Resettlement and Rehabilitation (MLRR) was created to implement this programme.

After the government organised the National Land Conference on Land Reform, there was slow progress on the implementation of resettlement. The Namibian Non-Governmental Forum (NANGOF) therefore organised The People's Conference to make recommendations on land policy and legislation (MPhil, 1998).

In 1995, the Agricultural (Commercial) Land Reform Act was passed to govern the acquisition of land for resettlement and in 1996, the National Resettlement Policy was accepted by Cabinet. The Resettlement Policy aims to facilitate the purchasing and allocation of land and the provision of all the necessary support to meet the basic needs of the settlers and to enable them to make a living (MPhil, 1998). The aims and objectives of this Policy will be discussed further in Section 2.2.

During the period from independence in 1990 to 1997, it is estimated that the MLRR resettled 16 000 people (Werner, 1997) and purchased almost 40 farms for resettlement. In the Namibia 'Vision 2030' the government is determined to acquire 20% of the required land in 1998 and the remaining 80% by the end of the decade (New Era, 30 Jan 1998).

1.2 MOTIVATION FOR STUDY

This study is being conducted in partial fulfillment of the research component of a Master of Philosophy in Environmental Science at the University of Cape Town. It is an individual study following on from *A Retrospective Assessment of Environmental Implications of Resettlement* which is a baseline report prepared by six MPhil students.

Based on fieldwork in the Oshikoto and Omaheke Regions of Namibia in January 1998, the baseline report attempted to gather information on the Resettlement Programme and evaluate elements of sustainability in its implementation.

This study will focus on the resources that the government has dedicated in order to implement this Resettlement Programme. The agricultural focus of the Resettlement Programme will be analysed and the development role and potential of agriculture in Namibia will be questioned.

There is a need to question the conventional wisdom that the marginalised people of Namibia can easily be helped by providing them with land and limited assistance to utilise it. The effectiveness of agriculture as a development tool will be greatly reduced if Namibia does not have a natural comparative advantage in the production of agricultural goods and there is little scope for expansion or intensification in the agricultural sector.

1.3 AIMS AND OBJECTIVES

This study will develop criteria which will be used to make an assessment of agriculture in Namibia. The aim is to ascertain whether Namibia has a comparative advantage in agricultural activities and therefore whether it is feasible to use agriculture as a development tool. This will be achieved by:

- Analysing the objectives of Namibia's Resettlement Programme and the outcome thereof;
- Investigating the cost of resettling people in agricultural schemes;
- Using the theory of comparative advantage and sustainable development to develop a set of criteria with which to evaluate agriculture in Namibia;
- Assessing comparative advantage in terms of biophysical, economic, social and political sustainability criteria;
- Evaluating the performance of agriculture based on these criteria.

Recommendations will then suggest alternatives to the current focus on agricultural production. Other sectors of the Namibian economy will be suggested for future evaluation to assess whether their potential to fulfill a development role could supplement or exceed that of agriculture.

It is hoped that policy makers will consider other sectors of the economy which could more efficiently and equitably achieve the development goals of the Resettlement Programme in a sustainable manner.

1.4 ASSUMPTIONS AND LIMITATIONS TO STUDY

It is assumed that all information contained in the baseline report (MPhil, 1998) is correct.

The limited time frame in which this study was conducted should be noted as a

constraint. Additionally, detailed, up to date information on Namibian Government expenditure on land reform, agriculture and other activities was difficult to obtain.

Primary research was undertaken for the baseline report (MPhil, 1998) some of which was directly relevant to the issues addressed in this report. It was not possible to undertake further primary research for the specific purposes of this study and therefore the findings are based principally on tertiary sources.

1.5 REPORT STRUCTURE

The report is divided into seven chapters.

Chapter 1 outlines the Namibian Resettlement Programme leading to the motivation for the study, its aims and objectives and the limitations to the study.

Chapter 2 provides further detail on the focus of the Resettlement Programme and its performance in terms of its objectives.

Chapter 3 develops a theoretical basis from comparative advantage and sustainable development with which to form criteria for the evaluation of agriculture in Namibia.

Chapter 4 assesses the performance of agriculture in Namibia with respect to the criteria developed in chapter 3.

Chapter 5 concludes the study with recommendations.

CHAPTER TWO

NAMIBIA'S RESETTLEMENT PROGRAMME

2.1 THE ECONOMIC COST OF RESETTLEMENT

The aim of this section is to consider the economic cost of the Resettlement Programme. Ideally, it would be useful to be able to calculate an all-inclusive cost of the Resettlement Programme. This cost could be divided by the number of settlers who have benefited from the programme in order to calculate the cost of resettling one person.

This figure could then be used to undertake a more complete cost-benefit analysis of the Resettlement Programme. These costs could be compared to the benefits generated by the Programme, which need not be measured only in monetary terms. The cost of the Resettlement Programme could be compared directly to the costs of other development programmes. It would then be up to decision makers to decide whether the costs are justified given the benefits which have accrued to all parties concerned.

However, due to the inter-ministerial nature of the Resettlement Programme, detailed estimates pertaining to this information are not available. Ministries other than the MLRR, such as Ministry of Water, Ministry of Agriculture, Ministry of Health and Ministry of Education, are all involved in providing staff time and resources to meet the needs of the settlers. None of these ministries have budgets specifically dedicated to the Resettlement Programme. It is therefore not possible to calculate the amount that it is actually costing the government to implement the Resettlement Programme. It is also not precisely clear how many people have been resettled through the Programme.

What is available is limited, and sometimes contradictory, information on expenditure by the MLRR.

2.1.1 Land Purchases

By early 1996, the MLRR had acquired 17 farms in the commercial sector for a total amount of N$ 12,9 million. By mid-1997, this number had more than doubled, when the government had obtained a total of 39 commercial farms for just over N$ 30 million (Werner, 1997).

In July 1995, the Prime Minister, wanting to accelerate the resettlement process, announced that N$ 100 million would be committed to land acquisition over the next five years. This amounts to N$ 20 million per year (*Ibid.*).

The First National Development Plan (NDP1) set out targets for land redistribution. It states that 14 000 people are to be resettled on redistributed land by the year 2000, while 150 000 ha. of land should be acquired by the government (GRN, 1995).

The MLRR has provided figures which indicate that both these targets have already been met. Almost 240 000 ha. of commercial farm land have already been bought, and between 19 000 and 20 000 people have been resettled (Werner, 1997). The number of existing settlers needs to be contrasted with an estimated 90 000 landless people who could or should benefit from the Resettlement Programme.

These statistics are also potentially misleading because it is unclear whether the number of people resettled refers to households or individuals.

2.1.2 Additional Expenditure

According to the MLRR, the government has spent N$ 65,5 million so far on farm implements, housing, provision of drinking water, irrigation, seeds, fertilisers and pesticides. Dividing this by the number of people resettled amounts to about N$ 3 200 per settler. The MLRR also supplies food rations to the settlers, supposedly until they are able to grow their own food. N$ 1.5 million was spent on supplying food in the 1995/1996 budget year (MLRR, 1996b).

The MLRR has budgeted for N$ 10 430 000 to cover running costs for the various resettlement projects for the 1998/99 year (MLRR, 1997b).

During the 1995/96 year 90 permanent houses were erected at a cost of N$ 0.52 million in five resettlement centers. During the period 1990 to 1996 the MLRR provided 250 houses. The settlers assisted with the construction of these houses, however, an estimate of the cost would have been over N$ 1.4 million, based on the 1996 figures (MLRR, 1996b).

An additional N$ 0.9 million was spent on renovating old houses at certain resettlement projects in the 1995/96 budget year and the MLRR spent N$ 1.2 million to supply water to communities (MLRR, 1996b).

These figures differ from the Development Budget prepared by the National Planning Commission. This presents the following figures for state development expenditure for the Resettlement Programme:

1995/96 (actual)	4.365 million
1996/97 (estimate)	6.400 million
1997/98 (estimate)	4.500 million

In addition to this, an amount of N$ 20 million per year was budgeted for land purchase and a further N$ 1 million was budgeted for new resettlement projects for the 1997/98 period (National Planning Commission Secretariat, 1998)

2.1.3 Cost Per Settler

As mentioned above, the MLRR has spent N$ 30 million on 230 000 ha of commercial farmland which works out at N$ 130 per hectare on average. The Technical Committee on Commercial Farmland (TCCF), appointed by the Prime Minister in 1991, made recommendations as to farm sizes for resettlement purposes.

The TCCF said that the minimum economically viable farm size in the northern regions of the country should be 5 000 ha for about eight households (Office of the Prime Minister, 1992). If the resettlement programme is implemented in this manner it would, or does, cost N$ 81 250 to resettle one household. Other estimates in other regions of the country have rendered figures as high as $ 200 000 per household. (Werner, pers. comm.). Anecdotal evidence has suggested that it would be cheaper to resettle beneficiaries in holiday houses on the beachfront at Swakopmund (*Ibid.*).

In order to accommodate the many people wanting to be resettled, resettlement farms often have many more than eight households on them. However, this is threatening to undermine their sustainability as land degradation occurs from overcrowding and the settlers struggle to become commercially viable on very small pieces of land (MPhil, 1998).

2.1.4 Administrative Expenditure of the MLRR

An additional cost of resettlement which has not been considered is the cost of running the Resettlement Division of the MLRR in Windhoek and at its various regional offices. Certain aspects of the work of the Division of Land Reform are also dedicated to resettlement and should therefore be costed in. These costs need to be added to the acquisition and running costs already considered.

The Namibian budget gives an idea of this expenditure. Detailed estimates of revenue and expenditure for the 1998/99 budget were not available, however, the MLRR spent N$ 60.783 million in the 1995/96 financial year according to the State Revenue Fund Estimate of Revenue and Expenditure for the Financial Year ending 31 March 1996. It is not certain what proportion of this expenditure was used by the Resettlement Division for its administrative functions in Windhoek.

2.1.5 Conclusion

Because the government follows a system of 'willing-seller willing-buyer', land reform in Namibia will be expensive. The political necessity of land reform must be weighed up against the inevitable costs involved. However, as an agricultural project the Resettlement Programme has proved to be expensive in terms of the economic returns generated. This will be discussed further in section 2.4. Politically, it is desirable to place many settlers onto resettlement farms in order for the government's programme to affect many people. Unfortunately this undermines the success of resettlement projects as much of the land purchased has marginal agricultural potential and cannot support large numbers of people.

The Namibian Government needs to examine the cost of resettling people and to then consider whether this money could be used elsewhere to perhaps generate greater economic and social returns. If this is the case, then the long term political returns would also be greater.

2.2 THE DEVELOPMENT ROLE OF RESETTLEMENT

According to Namibia's Resettlement Policy, the Resettlement Programme has certain objectives that it is intended to achieve. These objectives are as follows:

- Redress past imbalances in the distribution of economic resources, particularly land;
- Give some sections of the population an opportunity to produce their own food with a view towards self-sufficiency;
- Bring smallholder farmers into the mainstream of the Namibian economy by producing for the market;
- Create employment through full time farming;
- Alleviate human and livestock pressure in communal areas;
- Offer an opportunity to citizens to reintegrate into society after many years of

displacement by the colonialization process, war of liberation and circumstances (Ministry of Lands, Resettlement and Rehabilitation, 1996a).

The policy is not altogether clear what the specific desired outcomes of the Programme are and how the Programme will be implemented in order to achieve these objectives. Looking at these objectives it is, however, evident that the Government is wanting to empower a group of historically marginalised people to enable them to develop themselves. The Namibian Government has chosen to promote agriculture through a resettlement programme as the means to achieve the goal of developing certain people.

In order to assess the viability of agriculture as an appropriate development tool it is first necessary to examine what is meant by development.

In strictly economic terms, development has traditionally meant the capacity of a national economy, whose initial economic condition has been more or less static for a long time, to generate and sustain an annual increase in its gross national product (GNP) at significant rates (Todaro, 1994).

An alternative economic indicator of development is the rate of growth of income per capita or GNP per capita. This economic growth rate can be compared with the population growth rate of a country to see whether its people are getting wealthier or poorer.

In the past development was exclusively defined as economic development, reducing the degree of progress and maturity in a society to be measured by the level of its production (Seabrook, 1993). Economic development has been seen in terms of a restructuring of the economy so that agriculture employs fewer people and manufacturing and service industries become increasingly important generators of income and employment (Todaro, 1994).

Development has normally focused on industrialisation, often to the detriment of agriculture and rural development. International experience has been that the wealth created by this economic growth has not been equitably spread amongst the majority of people in many countries. Although the traditional models of development may have considered social indicators such as housing, health and education, they have failed to address the problems of poverty, unemployment and income distribution (*Ibid.*).

Without growth, it is difficult to have development. Yet growth alone does not guarantee development, understood in its broader dimension of increasing the standard of living and quality of life of the population as a whole (Munslow *et al*, 1997).

Professor Goulet (1971) put forward three core values which universally embrace much of what development is trying to achieve.

1. Sustenance: The ability to meet basic needs;
2. Self-esteem: A sense of worth and self-respect;
3. Choice: The freedom to improve their living conditions.

Todaro summarised Goulet's work by suggesting that development in all societies must at least have the following three objectives:

1. Increase the availability of basic life-sustaining goods such as food, health, housing;
2. Raise the standards of living. This includes higher incomes, more employment, improved education, enhanced cultural and spiritual interaction;
3. Expand the range of economic and social choices available to individuals and countries to reduce their dependence on others.

The United Nations (UN) developed the human development index (HDI) to assess how far a country has progressed in developing the potential of its human resources.

The HDI can be used to guide policy, such as budgetary policy.

In selecting the indicators needed to calculate the HDI of a country, the UN asked: What are the basic capabilities that people must have to participate in and contribute to the development of their society?

Their answer was: *"An ability to lead a long and healthy life, to be knowledgeable and to have access to the resources needed for a decent standard of living"* (Maharaj, 1998a).

In Section 2.4 the extent to which these developmental objectives have been met by the current resettlement programme will be examined.

In order to ensure that all development is of a lasting nature and has inter-generational equity the notion of sustainable development has evolved (Hill & Bowen, 1997). Sustainable development will be further discussed in Section 3.3. Criteria based on sustainable development will be developed which will be used to evaluate agriculture in Namibia.

2.3 AGRICULTURAL FOCUS OF THE PROGRAMME

According to the National Resettlement Policy, the Resettlement Programme will target the San, returnees, ex-soldiers, disabled, displaced and landless people (MLRR, 1996a). It will involve these people in agricultural projects as a means of redistributing land and giving them an opportunity to make a self-sustaining living. Two modes of working on the scheme have been advocated by the Government:

1. Individual plots where vegetables can be grown;
2. Co-operative resettlement modes such as communal fields and grazing (MLRR, 1996a).

Some of the settlers involved in the programme have previously been labourers on white commercial farms. They therefore have experience of certain types of farming. However, many of the settlers have limited knowledge of crop farming and, perhaps more importantly, no particular interest in farming. It is evident from many of the settlers that as long as the government continues to provide food rations, there is no real incentive to cultivate their own crops given the extremely harsh natural environment (MPhil, 1998).

All of the resettlement projects that were studied in the baseline report were still largely reliant on food rations from the government (*Ibid.*). Self-sufficiency in food is still a long term goal and doubts were expressed as to the ability of the settlers to be integrated into the commercial farming sector. This is primarily due to a lack of literacy and management skills (Steel, pers. comm.).

The Resettlement Policy does say that settlers may engage in secondary income generating activities (MLRR, 1996a). However, on the ground there is little evidence to show that secondary industry is encouraged or supported by the Government (MPhil, 1998).

The Resettlement Programme buys up farms, often at inflated prices (Steel, pers. comm.), and settles many people onto land that may have supported only a few families of farmers and farm workers. They expect the increased density of people to be supported by intensive crop farming. This is, however, not feasible in the southern[1] parts of Namibia where no dryland crop farming can be practiced. Irrigated crop farming is capital intensive, high maintenance and requires skilled labour. This has resulted in the failure of resettlement farms in the southern parts of Namibia (Vergotine, pers. comm.).

What the baseline report proposed was that resettlement should only be implemented in the northern regions of the country where there is a higher rainfall. Here each settler

[1] Except for the 'Maize Triangle', an area around Grootfontein, Otavi and Tsumeb, land south of the "Red Line", the vetinary cordon fence demarcating the communal lands, is not suitable for dryland crop farming due to low rainfall (MPhil, 1998).

can be allocated a patch of land which they can intensively cultivate and then livestock can be grazed on communal land (MPhil, 1998). This is the only sustainable manner in which an increased number of people can make a livelihood out of agriculture in Namibia.

The Resettlement Programme resettles people in relatively low densities on various farms around the country, many of which are inaccessible. This has meant that the Government has had difficulty in providing further assistance to the settlers in terms of providing access to education, health, agricultural assistance and other urban facilities (Werner, 1997). If the Government had an urban resettlement scheme and people were densely settled near existing facilities, it would be easier to provide for their basic needs.

In Section 2.2 the development role of the resettlement programme was acknowledged. It was stated that traditional models of development regarded a move away from agriculture towards an industrially based economy as progress. This study will differ from that viewpoint. It is not advocating that industrialisation should be sought after with the greatest urgency. Rather, it is proposing that where communities are engaged in farming activities, this should be encouraged and supported by government to help them become more sustainable. They should be encouraged to diversify and helped to enter the commercial farming sector if they so desire.

But, given the Namibian environment, it may not be prudent for the disenfranchised to be encouraged to be farmers over and above any other activity. By forcing them to engage in farming, Goulet's third criteria for development, that of providing choice, is ignored.

Namibia's agricultural performance and potential will be further discussed in Section 4.2.3.

2.4 OUTCOME OF THE PROGRAMME

The aim of this section is to briefly examine the results of the Resettlement Programme. This analysis is based on research conducted for the baseline report (MPhil, 1998).

In terms of the political objective of redistributing land, the Resettlement Programme has been relatively successful with between 20 000 and 30 000 people having been resettled (Vergotine, pers. comm.). The Baseline Report (MPhil, 1998), however, noted that, based on research evidence, the Resettlement Programme has been less successful in its attempt to "*uplift the living standard of all Namibians*" as stated in the objectives of the Resettlement Policy (MLRR, 1996a).

Most of the settlers are reliant on the Government for food rations and often complained that they would like to receive assistance with clothing, transport and other necessities. Even the projects which have been running for some time, for example Tsintsabis[2], have led to dependency as settlers are not producing their own food in the manner initially envisaged (MPhil, 1998).

Settlers struggle to survive as they have no regular access to income. The Resettlement Policy does not encourage secondary industry on resettlement projects and settlers are required to work on the resettlement farms in order to be eligible for food for work rations supplied by the government. This prevents them from obtaining additional income from work in towns or nearby commercial farms (*Ibid.*).

Agriculture on the resettlement farms has been slow in taking off because of a number of factors which include the following:

- The settlers often have limited farming expertise or experience and the Government has failed to supply training to compensate for this;

[2] Tsintsabis is a resettlement farm 60 km north of Tsumeb. Resettlement was started at Tsinstabis in 1991 and it currently supports 169 households with a total population of 821 people on 1862 ha (MPhil, 1998).

- Government involvement by means of providing equipment, maintenance support and agricultural supplies is often inadequate or delayed;
- Many settlers are uneducated and, more specifically, lack management skills which prevents them from planning production and effectively marketing produce;
- The settlers have limited access to capital and therefore cannot finance agricultural development projects such as irrigation;
- Dryland agriculture is not possible in the south and irrigation projects are very expensive;
- Many of the resettlement projects are on marginal farm land where only a few people can be supported through low density stock grazing;
- Many of the settlers have no livestock and therefore cannot utilise grazing land.

One of the objectives of the Resettlement Programme is *"to give some sections of the population an opportunity to produce their own food and sell the excess food to the market and by so doing contribute to the national food security"* (MLRR, 1997a). Based on evidence gathered for the baseline report this objective is certainly not being achieved (MPhil, 1998). This is very unfortunate for the settlers, whose living standards have not significantly improved.

However, if the Resettlement Programme continues unabated, it will begin to affect the greater Namibian economy. If productive farms are being purchased and the settlers cannot keep up the production levels generated by the commercial farmers, food will become more expensive and export revenues will drop. Settlers may be able to eke out a subsistence living but surplus production which would feed the towns will not be forthcoming if resettlement projects cannot become commercially viable.

The settlers have been provided with limited access to schools and health services but have no funds to pay for them. Many settlers complained of a lack of transport which limited their ability to utilise schools and clinics as well as shops, agricultural supplies and other town based facilities because of the often remote location of the resettlement farms (MPhil, 1998). To illustrate the importance of access to facilities, one community being resettled in the Gobabis region was offered a choice of two farms.

They chose the farm closer to the town of Gobabis despite its inferior agricultural potential in order to have easier access to the available amenities.

In terms of the policy-stated objectives, the Resettlement Programme has had success at different levels. Poverty alleviation has been achieved to some degree as the basic needs of the settlers such as food, water, shelter and health are provided for. However, there is little baseline data available with which present circumstances can be compared. The settlers still struggle to meet other needs such as clothing, transport and education. The opportunities for them to rise above their predicament are limited and a demonstration of initiative from the settlers is not encouraged by the authorities (*Ibid.*).

As mentioned, self sufficiency has not been achieved. The yield from communal gardens is not sufficient for subsistence or significant sale at respective markets. This is partially a result of the fact that the programme has not resulted in full time employment through farming for the settlers. This has meant that they have not become integrated with the market economy (*Ibid.*)

Access to credit is very limited for the settlers as many are not in possession of formal documentation detailing their rights to their land which they can use as collateral. Additionally they do not own the land and therefore have to use their usufruct rights or cattle as collateral.

As mentioned at the start of this section, the results discussed here came from the baseline report (MPhil, 1998). The baseline report looked at the implementation of the Resettlement Programme and made recommendations which, if implemented, could improve the performance of future and existing resettlement projects. Recommendations were also made for policy level changes. In this study, the possibility of a more fundamental paradigm shift is examined as alternatives to the Resettlement Programme are suggested. This study will consider whether it is the agricultural focus of the Resettlement Programme which is a primary cause of the limited success of the Programme.

CHAPTER 3

COMPARATIVE ADVANTAGE

3.1 INTRODUCTION

As discussed in Section 2.3, it is evident that the Namibian Resettlement Programme is strictly agriculturally based. Section 2.4 discussed the degree to which the Resettlement Programme achieved certain development goals as set out in Section 2.2. This study is suggesting that the reason for the poor performance of the Programme is because of the agricultural basis of the Programme. In order to consider whether an agricultural resettlement programme is an appropriate means to aid the development of a marginalised group of people, it is necessary to consider whether agriculture is a suitable activity for the Government to be promoting in Namibia.

This study will be evaluating agriculture in Namibia by considering whether Namibia has a comparative advantage in agriculture. Comparative advantage will be approached from a broader perspective than merely economic efficiency compared to other nations. Whether Namibia has a comparative advantage in agriculture will be determined based on an assessment of the biophysical, economic, social and political performance and potential of agriculture in Namibia. By considering all these factors, an idea of the long term sustainability of using agriculture as a development tool can be obtained.

3.2 THEORY OF COMPARATIVE ADVANTAGE

Many people in Namibia are still living a subsistence lifestyle whereby they grow their own food and can engage in limited trade to satisfy their other needs by selling any surplus production. In 1994 there were 150 000 subsistence farmers (GRN, 1995). However, as even the most remote communities become integrated with the global

economy and traditional resources cannot satisfy the needs of a burgeoning population, people are struggling to survive in a traditional way. In order to gain access to improved health, education and other development technologies it is necessary that the Namibian people trade with the global community.

In order to survive in this environment of increased globalisation and diminishing barriers to trade, it is essential that Namibia finds out what it can produce better than other nations if it wants to compete in the international arena and benefit from trade liberalisation.

Trade is the key to realising a comparative advantage, which can be defined as the ability of one nation (region or individual) to produce a commodity at a lesser opportunity cost of other products foregone than another nation (Lipsey *et al*, 1987).

The opportunity cost of agricultural production in Namibia may be very high. If this is the case then this would weaken the argument for promoting agriculture in Namibia. An example of the opportunity cost of agriculture could be benefits of utilising the land for other activities such as game farming, hunting or tourism ventures to the extent that these benefits would be greater than the benefits of agriculture.

With trade, each individual, region, or nation is able to concentrate on producing goods and services that it produces efficiently while trading to obtain goods and services that it does not produce efficiently (Lipsey *et al*, 1987).

Trade allows economies of scales to be developed even for small economies (*Ibid.*). Namibia only has a population of 1.5 million people, many of whom have little spending power, so the domestic market is very small. However, if Namibia produces something at a lower cost than a foreign country, the number of potential buyers will far exceed that of the local market. Production can be increased to a level where economies of scale maximise efficiency and surplus production can be exported, generating valuable foreign exchange. This can in turn be used to purchase products which other countries produce more efficiently than Namibia.

A comparative advantage can be enhanced through specialisation as the people of one nation hone their skills to the production of a particular product and locate and consistently satisfy niche markets (*Ibid.*).

With trade, each nation is able to concentrate on producing goods and services that it produces efficiently while trading to obtain goods and services that it does not produce efficiently. Gains from trade can be generated through this process of specialisation.

These gains from specialisation are dependent on comparative advantage and not absolute advantage (*Ibid.*). Absolute advantage is the ideal trade situation whereby Namibia would be able to produce product X more efficiently than say, for example Germany. Namibia would then trade product X for product Y which Germany produces more efficiently than Namibia. In the real world it may turn out that Germany can produce product X and product Y more efficiently than Namibia. However, through specialisation, Namibia can develop a comparative advantage if Germany specialises in the production of the product in which it has the greatest efficiency advantage over Namibia.

Comparative advantages arise out of a difference in costs of production and prices of different products. These would be naturally inherent in free economies. However, governments distort the functioning of economies and hence can influence a country's comparative advantage.

This can be examined from a positive or negative viewpoint:

From a positive perspective, people will learn by doing activities and experience will increase efficiency (*Ibid.*). The important implication from this is that policy makers need not accept current comparative advantages as given. Through such means as education and tax incentives, they can seek to develop new comparative advantages (or they can promote industries in which they do not have, and will never achieve, comparative advantage). This has been the approach taken by many of the Asian

Tigers (Taiwan, South Korea, Singapore, and Hong Kong) which have succeeded in transforming their economies through government intervention from unskilled-labour to skilled-labour to capital-intensive production (Smith, 1991).

From a negative perspective, misguided education policies, the wrong tax incentives, or policies that discourage risk taking can lead to the rapid erosion of a country's comparative advantage in a particular product. So, too, can competitive developments elsewhere in the world. Countries cannot complacently assume that an existing comparative advantage will persist (Lipsey *et al*, 1987).

Worldwide, many governments have protected agricultural production from foreign competition to protect farmers despite the obvious lack of comparative advantage that their country has in agriculture.

Michael Porter (1990) argued that neoclassical trade theory overrides a crucial distinction between basic factors such as undeveloped physical resources and unskilled labour, and advanced skills based factors of production. He concluded that the central task facing developing countries is to try and escape from the cycle of primary resource export dependency which is vulnerable to the vagaries of international prices. The resource intensity of advanced economies will fall as they become more sophisticated and this will lead to less reliance on developing countries.

Porter suggests that it is imperative that developing nations create advanced factors to obtain a more reliable comparative advantage. While this is desirable, as agricultural products are subject to unfavourable world demand prospects and terms of trade (Todaro, 1994), it is not that easy to achieve. It would require government initiative such as the Asian example of promoting industries where no evident comparative advantage exists. The government interventionist approach can produce impressive results but it is prone to long term failure as governments are reluctant to withdraw their control from self-standing operations.

The neoclassical view of comparative advantage suggests that governments should encourage production to specialise in those goods where they currently have a comparative advantage in order to maximise the well being of their citizens. A competing view says that comparative advantages are certainly there, but they are typically acquired, not nature-given - and they change. This view of comparative advantage is dynamic rather than static. New industries are seen to depend more on human capital than on fixed physical capital or natural resources. For example, the United States has dominated the software industry and Britain generates considerable revenue through the music industry. Neither of these events can be accounted for by endowments of natural resources (Todaro, 1994).

It is likely that both views hold truth and it is necessary to consider natural resources, climate, culture, and social and institutional arrangements (Lipsey *et al*, 1987).

Because of this fact that comparative advantage is a combination of natural resource endowment and human capital and skills, Namibia has failed to take advantage of some of its inherent advantages. It is first necessary to identify what natural resources exist, where they occur, and how to take advantage of them, before they can be effectively utilised. For example, the ecotourism industry has only recently become accessible to poor rural people in Namibia. Many of the Namibian people do not have the skills or knowledge to gain any of the potential benefits of this industry, despite have readily accessible natural resources to attract ecotourists. The Government needs to help people to partake this industry which is potentially more sustainable than agriculture in terms of its revenue generation and biophysical sensitivity and has greater employment generating potential.

3.3 CRITERIA FOR EVALUATING AGRICULTURE

In order to evaluate whether Namibia has a comparative advantage in agriculture a number of criteria need to be developed. A broader approach than merely calculating the cost of production will be taken. It is necessary to determine the ability of

agriculture to function as a development tool in Namibia.

3.3.1 Strategic Environmental Assessment (SEA)

In developing criteria to evaluate agriculture in Namibia it is useful to consider the principles of Strategic Environmental Assessment (SEA)[3]. One of the recommendations of the Baseline Report was for an SEA to be undertaken prior to the development and implementation of policies such as the Resettlement Policy (MPhil, 1998)

One of the main features of an SEA is that it considers the capacity of the natural environment to accommodate development and it will indicate what type of development is appropriate in a given situation. This contrasts with the focus of project specific Environmental Impact Assessment (EIA) which concentrates on the impact of a particular development on the environment (Hansen *et al.*, 1997).

By considering the developmental carrying capacity of the environment, an SEA implemented to address the developmental problems of Namibia would consider what activities can be sustainably promoted and practiced in the Namibian environment. Rather than considering the impact of the Resettlement Programme on the environment, an earlier step should have been taken to consider what development the environment can accommodate.

An assessment of the environment would include the natural environment's capability to sustain the life giving processes, the economic viability, and social acceptability and appropriateness of any development.

This is necessary if any development project is going to provide lasting benefits for future generations and whether it can operate independently of government support.

[3] SEA can be defined as the systematic process of strategically identifying and evaluating the potential environmental impacts and issues of proposed policies, programmes and plans so as to ensure that environmental concerns are addressed at the earliest stage possible in the decision making process and with equivalent attention to social and economic considerations (Therival, 1992; Sadler and Verheem, 1996; UNEP, 1996; CSIR, 1996; Hansen et al., 1997).

This report will not attempt to undertake an SEA, but the principles of SEA will be used in the development of criteria to examine the sustainability of promoting new agricultural projects.

3.3.2 Sustainable Development

The term *sustainability* has been adopted in an attempt to clarify the desired balance between economic growth on the one hand and environmental preservation on the other (Todaro, 1994).

Sustainable development has been defined by the UN Commission on Sustainable Development as "*improving the quality of human life while living within the carrying capacity of supporting ecosystems*" (CSD, 1996:27).

The current use of the concept of sustainable development is based on the need to make development compatible with a growing environmental awareness. This is not limited to 'green issues' such as ecological integrity but also includes notions such as social justice and equity as mentioned in Section 2.2. What is needed is the development of people, not merely aggregate economic growth (Hill & Bowen, 1997).

In 1987, the World Commission on Environment and Development (WCED) produced what has become known as the 'Brundtland Report'. This described the concept of sustainable development as meeting the basic needs of all people while providing the opportunity for all to satisfy their aspirations for a better life without compromising the ability of future generations to meet their own needs. The Brundtland report placed more attention on the social and economic goals of society in order to try and address the needs of developing countries (WCED, 1987).

Hill and Bowen (1997) developed a model for sustainable development in the construction industry and this was used as a basis to develop sustainability criteria in this report. The Hill and Bowen model assessed the principles of sustainability under

4 categories referred to as the 'pillars of sustainability'. They are as follows:

- The social principles of sustainability;
- The economic principles of sustainability;
- The technical principles of sustainability;
- The biophysical principles of sustainability.

While these categories are sufficiently broad to be used to analyse a range of activities it was felt that they should be adapted to develop criteria for the evaluation of agriculture in Namibia.

Specifically, the technical principles of sustainability will be replaced by a category examining the political issues involved in promoting agriculture. The other categories will carry the same labels, however, they will be adapted to assess agriculture instead of construction.

While these categories are being used to critically analyse agriculture in Namibia it is important to note that they are all related and interdependent. For example, the biophysical sustainability of agriculture will influence the economic sustainability of agriculture which will in turn influence the political sustainability of agriculture. The reverse relationship is also true.

The following categories will therefore be used to assess agriculture in Namibia:

Biophysical principles of Sustainability

These principles require effective use of natural resources within the productive carrying capacity of the natural system which supports them. They include issues such as:

- Using renewable resources in preference to non-renewable resources;
- Minimising pollution of air land and water;
- Maintaining and restoring the Earth's vitality and ecological diversity.

Any activity impacting the natural environment needs to be assessed to determine whether it can be carried on indefinitely. In order to do this it would have to return whatever it takes from the natural environment in a form which the natural environment can use to carry on the life giving processes.

The natural environment has four fundamental economic roles: life-supporting, resource-providing, waste-assimilation, and recreational and aesthetic. Sustainable development is now at the forefront of the agenda precisely because the environment's ability to perform these functions is under threat (Munslow, 1997).

Economic Principles of Sustainability

Economic sustainability should promote self sufficiency. Beneficiaries of a development programme based on agriculture should be able to make a living independent of government support, minimising the long term commitment from Government and maximising the income generated by settlers. Principles of economic sustainability include:

- Farmers can utilise and maintain their farms to generate income;
- Employment is generated;
- Resource use maximises return to the national economy.

Economic sustainability focuses on efficiency. Natural resources must be allocated to their most efficient use in order to maximise the return for their utilisation.

Namibia's economy is heavily dependent on non renewable resources, basically mineral exploitation. The move towards sustainability means using the revenue generated from the country's non-renewable resources to maximize the sustainable use of its renewable resources (animals, wildlife, fish and plant stocks) and its continuing resources (sunlight, wave, and wind energy). Non-renewable resources can be used far more efficiently than renewable resources but this depends upon improving management practices in the utilisation of the natural resource base of the

country. This involves science and technology policy and human resource capacity building (Munslow, 1997).

The apparent conflict between sustainability and efficiency is resolved by thinking of sustainability as a matter of inter-generational equity (Norgaard, 1992).

The concern with 'inter-generational equity' has a logical corollary in a concern with 'intra-generational' equity, so that the focus is particularly on meeting the needs of the poor (Hunter, 1997). Social principles of sustainability address issues of intra-generational equity and political principles of sustainability can address issues of inter-generational equity.

Social Principles of Sustainability

These principles are based on the notion of social equity and justice. They call for the development of people, not just increased economic growth. These principles are an extension of Goulet's 'development values'.

- Improve the quality of human life, including poverty alleviation;
- Make provision for social self determination and cultural diversity in development planning;
- Implement skills training and capacity enhancement of disadvantaged people;
- Provide a clear definition of rights over land use and other resources;
- Consider equity and disparity within the current population and between present and future generations;

Political Principles of Sustainability

Without compromising the sustainability principles above, the following principles should be followed:

- Beneficiary participation in development should be encouraged from the earliest stage possible;
- Take a long term view;

- Provide temporary relief until long term solutions can be instituted.

The Government, as the political representative of the people, needs to ensure that sustainability is carried out at an institutional level and at a grass roots level. Solutions implemented to meet the needs of the people can not simply satisfy the present generation and development projects must endure without ongoing government support. Politicians need to ensure that the urgent needs of the poor are met but must resist the temptation to provide high profile relief to gain political favour with no prospect of providing long term solutions to underlying problems.

3.3.3 Conclusion

The aim is to gauge to what extent agriculture is sustainable according to each of these criteria. It is not possible to say that agriculture is or is not sustainable, as the term 'sustainable development' is loaded and has multiple definitions. However, agriculture's sustainability performance according to these criteria can be compared to other sectors of the Namibian economy which may have stronger or weaker elements of sustainability according to these same development criteria.

The results of this comparison can be used to determine the relative efficiencies of, and benefits derived from, various production activities. This is essential to determine what Namibia's comparative advantages currently are and what they potentially could be, as well as who could benefit from them.

CHAPTER 4

EVALUATION OF NAMIBIAN AGRICULTURE

4.1 INTRODUCTION

Namibia's agricultural sector will now be examined according to the criteria developed in the previous chapter in order to see whether Namibia has a comparative advantage in agricultural activities.

4.2 BIOPHYSICAL SUSTAINABILITY

This section will consider the nature of the Namibian environment and its suitability for agriculture

Biophysical sustainability is essential for maintaining the ecological integrity of the earth. It is vital that the life-supporting forces within nature are maintained and nurtured. This is essential for long term economic sustainability as agriculture cannot remain viable in a degraded natural environment.

In order to make an assessment of agriculture in Namibia it is necessary to begin with a discussion of the natural features of Namibia.

4.2.1 General

Namibia covers nearly 3 percent of the total land area of Africa but contains only about 0.2 percent of the total population of the continent.

The country can be divided into three distinct regions: The Namib Desert, the Central Highland and the Kalahari. The Namib Desert forms a western margin between the

coast and the escarpment. It is 80 to 120 km wide and covers about 15 percent of Namibia's total area. The Central Highland and the Kalahari form the Central Plateau. The Central Plateau rises rapidly eastwards and varies in height between 1000 and 2000 metres (Moyo *et al*, 1993).

Most rivers in Namibia are periodic with the only perennial rivers forming the north and south borders and flowing through the Caprivi Strip.

4.2.2 Climate

Namibia is the most arid country south of the Sahara Desert with a dry climate and highly variable and unpredictable rainfall. Aridity, as distinct from drought[4], is a permanent feature of the climate (Drought Task Force, 1996). The average annual rainfall increases from less than 20mm on the coast to more than 700mm in the north-east (DWA, 1991). The potential average annual evaporation varies from 2600mm in the north to 3780mm in the central-southern region. It is thus estimated that about 80 percent of the total rainfall evaporates shortly after precipitation. Coastal temperatures are moderated by the cold Benguella Current which, however, provides little moisture for precipitation other than coastal fog which supports desert life. Most of the country experiences a long dry season with very little rain (Moyo *et al*, 1993).

4.2.3 Agriculture

Seventy percent of the total population is dependent, directly or indirectly, on farming although it only contributes 10 percent of Gross Domestic Product (GDP).

Agriculture in Namibia is strongly divided into two sectors: commercial white farmers and black subsistence farmers.

[4] Drought is a relative phenomenon, variably defined, but commonly a period of exceptionally low rainfall and differs from aridity in that it can occur in any climatic zone (MPhil, 1997).

Commercial Farming

The commercial farming sector produces about 80 percent of agricultural yield, primarily through livestock farming which contributes 80 percent to agricultural production. Commercial crop farming takes place in the 'maize triangle' of Grootfontein, Otavi and Tsumeb. The maize grown here is produced for the local market (Moyo *et al*, 1993).

The commercial farming sector consists of only 3700 farmers who own freehold land which accounts for 44% of total land area (GRN, 1995).

Virtually all livestock production recorded in economic accounts is provided by the commercial sector. In 1994, only 4% of marketed livestock originated in communal areas (Meat Board of Namibia, 1995).

Subsistence Farming

Over 150 000 people work on communally owned land which makes up 43% of the total land area (GRN, 1995). Most communal farmers live in the heavily populated northern communal areas along the Angolan border which receive enough rainfall in a good year for homesteads to cultivate staples, and in some areas potentially other crops, in combination with some stock keeping (Oxfam, 1996).

When Namibia was administered by South Africa, black farmers were undermined by the expropriation of land and most funding for agricultural support was channeled to the white commercial farmers. The Red Line, a veterinary cordon fence, prevented cattle from the homelands being marketed outside these homelands (Moyo *et al*, 1993).

Despite the small contribution that livestock in the communal sector makes to the national economic accounts, it provides many non-marketed products and services such as draught power for crop farming, milk, hides, manure, and a form of savings

for a community which does not have access to conventional sources of credit (Benhke and Scoones, 1992). The value of these products is not fully represented in the national economic accounts.

Farming Conditions

Namibia's farmers are subject to severe pressure from harsh environmental conditions. The extremely dry and erratic climate makes farming a difficult and high risk occupation. There is general agreement that some forms of land degradation are occurring, most notably bush encroachment in the north, but little systematic information has been collected to quantify this problem. Consequently, there is a great deal of controversy about the extent of degradation, its economic impact, and what should be done about it (Lange *et al*, 1997).

The productivity of a dryland ecosystem is better described by its variability over time than by its average values (Westoby *et al*, 1993; Sullivan, 1996b). The production potential of rangeland in arid lands is therefore dominated by rainfall. One of the key technical elements of range management and water use in arid lands is the principle of mobility or transhumance. Livestock is moved in accordance with the unpredictable nature of rainfall and ecology, as well as the unpredictable nature of water points. This trend implies that the livestock population is kept low through drought or other episodic events (Scoones, 1995).

This is in contrast to theories of equilibrium systems where vegetation changes are perceived to be gradual and livestock populations are limited by available forage. Increased numbers of livestock will cause degradation. In equilibrium systems, stock numbers (carrying capacity) can be determined and maintained from over time. In arid and semi-arid areas, where primary productivity is largely determined by extremely variable rainfall events, carrying capacity is highly variable and difficult to determine (*Ibid.*). While signs of equilibrium grassland degradation are frequently seen in arid and semi-arid rangelands, they do not always indicate degradation and may in fact reflect the naturally low rainfall. Such arid and semi-arid systems are termed non-

equilibrium systems (MPhil, 1997).

These non-equilibrium systems have important implications for farming and rangeland management. Farming practices are required that place emphasis on flexible responses to uncertain events, and on mobility to allow the optimal use of a heterogeneous environment (Scoones, 1995). Management systems have to cope with large quantitative fluctuations in resource availability.

Because climate is so variable, adhering to a single conservative stock rate is rarely applicable from year to year. Rangeland management practices in arid lands should accommodate and adapt to variable abiotic parameters.

However, dominant thinking, particularly amongst commercial farmers, about arid and semi-arid systems remains focused on imposing stability (Kayser, pers. comm.). This has resulted in numerous policies that have constrained people's ability to cope with aridity. In addition, various other factors such as shortages of skilled labour, changing ownership patterns, absentee owners, lack of secure tenure and population increases are also reducing the chances of successful tracking of environmental variability. These changes may contribute to the process of environmental degradation (MPhil, 1997).

During drought periods, situations of irreversible vegetation degradation arise whenever successive dry years eliminate herbaceous cover and leave large tracts of bare ground. Temporary assistance is often provided through the provision of waterholes which subsequently become permanent features. Nomadic lifestyles are replaced by a sedentary existence and land degradation becomes locally very severe (*Ibid.*).

With few exceptions, the land, commercial or communal, south of the Red Line is suitable only for extensive stock farming, and is ecologically very fragile: the low carrying capacity of the land requires relatively large land units for enough stock to support a household sustainably. Agricultural conditions, and hence the skills needed

to farm the land sustainably, vary dramatically from region to region in Namibia. (Oxfam, 1996).

The potential for crop farming is generally limited to the north of the country where water is less scarce. In the central regions agricultural potential is confined to livestock farming while in the more arid south only extensive sheep and goat farming is possible without irrigation (GRN, 1995).

The low rainfall means that the vegetation can only support low livestock densities. It is therefore not possible to support significantly more people in the dryer parts of the country than are already farming there. Many of the existing white commercial farmers are currently heavily in debt (Shumba, pers. comm.). These farmers often cannot make a living from their farms and have sought supplementary employment in towns (Kayser, pers. comm.). If the Government were to purchase these farms it would mean that a number of farm workers would be unemployed and them and their families would probably increase the size of the pool of people wanting to be resettled. Settlers would then be placed on the farms and be expected to be successful where their predecessors had failed. The inevitable lack of success of this approach can be illustrated by the failure of resettlement projects around Hardap in the south (Vergotine, pers. comm.).

Changes in the Cattle Industry

To assess the potential of agriculture it is useful to examine the cattle industry in Namibia from a historical perspective and to identify trends for the future.

The number of cattle on commercial farms grew rapidly during the first half of this century, peaked in the late 1950's at 2.6 million head, and has steadily declined since then by 50 percent to 1.2 million in 1994. The numbers of small stock show a parallel trend (Lange *et al*, 1997).

The increase in cattle head has been attributed to the development of watering points

and camps in commercial areas which opened up new grazing land (Rawlinson, 1994). The subsequent decline in cattle numbers is more difficult to explain.

One explanation for this decline was that farmers are substituting small stock and wildlife for cattle. The number of small stock has also declined over this period so this does not explain the decline in cattle numbers. Wildlife on commercial farms has increased as farmers are diversifying their incomes through game ranching (Barnes and de Jager, 1996), but the numbers are not significant enough to account for the decline in cattle.

Another explanation for the decline in cattle numbers is that farmers have implemented fundamental changes in their farm management practices by which herd numbers have been deliberately reduced below ecological carrying capacity in order to increase herd productivity. This may include an increase in the average size of cattle through selective breeding so that the declining number of cattle is offset by increased individual animal weight. Alternatively, a deterioration in environmental conditions has reduced the carrying capacity of the land. This includes both a decline in rainfall over the past 40 years and land degradation, particularly bush encroachment (Lange *et al*, 1997).

Lange *et al* (1997) conducted a study which found that the size of marketed cattle has not grown bigger over time and therefore the weight of live herds will not have changed either. It is therefore necessary to look to reasons other than change in weight to explain the declining numbers of cattle supported on commercial farms.

The decline in cattle numbers may represent a deliberate attempt by farmers to increase their herd productivity and farm profitability. If the high cattle stocking rate of the 1950's was close to the limit of ecological capacity, then herd production potential (breeding and weight gain) would be low. Reducing stocking rates should, in theory, bring this potential toward the maximum sustainable yield of both rangelands and herd.

Herd productivity has increased significantly since the 1960's with cattle offtake to numbers of livestock increasing from 15% to around 30% in the 1980's. The doubling of turnover counters the halving of herd size. The drought conditions in the 1970's, 1980's and 1990's resulted in extremely high offtake (Lange *et al*, 1997).

The economic stress brought on by droughts did not result in a significant consolidation of farms; the number of farm businesses remained virtually the same from 1975 to 1991 (Harrison, 1983; Rawlinson, 1994) but the number of farmers who rely on off-farm employment for a significant share of their income increased, growing to 25% in 1982 according to Harrison (1983). Rawlinson (1994), found that in 1990, 40% of commercial farms were found not to be economically viable based on size and carrying capacity of the farm. It is likely that these farmers supplemented farm income by other farm activities like tourism or off-farm activities. Many of the farms, even in the higher rainfall regions around the 'Maize Triangle', now have absentee landlords (Kayser, pers. comm.). This evidence suggests that there has been a tendency for the financial well-being of livestock producers to decline over the past thirty-five years (Lange *et al*, 1997).

This analysis of the cattle industry in Namibia does not paint a picture of a growth industry. It is in this environment of decreasing viability of cattle farming in which the Government wants to implement an agriculturally based resettlement programme.

Binswanger and Kinsey (1996) noted that resettlement projects on good soils and with adequate moisture to grow crops have often been very successful. Where soil and climate have been marginal, as in certain parts of Indonesia, Ethiopia, Zimbabwe and Brazil, outcomes have been poor. They said that in such cases, especially when settlements are remote, only very strong communities are successful. Agriculture in Namibia certainly satisfies the criteria of having a marginal climate and soil quality and resettlement farms are often situated in remote locations.

Land Tenure and Redistribution

The issue of land distribution and redistribution in Namibia is highly complex and complicated by Namibia's ecology.

This is illustrated by the following evidence which tells a different story to that of the cattle industry. Oxfam (1996) suggested that if the approximately 6000 commercial farm units (in previously 'white' areas) were redivided into the minimum ecologically sustainable units as defined by the Ministry of Agriculture for their districts, an additional 2300 farm units would be created. However, if the same procedure was applied to farming areas in the communal (former bantustan) areas which make up about half of Namibia's agricultural surface, there would be a net loss of 13300 units.

Therefore, no matter what the government attempts in the way of land reform, the ability of the land and water supply, however divided, to sustain the increasing population (45% of Namibians are under 15) is at its limit (Oxfam, 1996).

The communal land is already being farmed over-intensively which is resulting in degradation of the land (Oxfam, 1996). However, to take people from the communal lands and to resettle them on commercial farms in a manner which resembles the system of tenure on the communal lands will extend the problems of the communal lands in the long term.

Other researchers disagree with the often suggested notion that the communal lands have been degraded by overgrazing and erosion. Beinart (1984) said that this notion has often been based on colonial protectionist ideas. The causes most frequently cited to explain the problem were overstocking, agricultural techniques, the fragmentation of landholdings, and high population growth rates. Colonial powers in Africa have historically introduced soil conservation programmes. The official reaction to soil erosion and the subsequent conservation policies followed the classic blaming-the-victim approach. The fact that a minority of Africans were forced to work marginal soils did not enter the analysis. The land-extensive nature of African agricultural

systems in the context of increasing population growth and relative land scarcity resulted in overcrowded conditions. Policies such as the prohibition of livestock raising in certain areas, group resettlement, and compulsory conservation work were strongly resented by rural producers. The highly coercive nature of these policies and the fact that European settlers were their major beneficiaries made soil conservation a major political issue (Beinart, 1984).

There is an alternative view which suggests that human impact on the land is negligible compared to the effects of drought which is all too common in Namibia (Cowlishaw, pers. comm.). It is therefore argued that the most efficient manner in which the land can be farmed is to overstock and expect large stock losses in a drought period. This is the approach taken in the communal lands where the importance of quantity of livestock rather than quality has become culturally enforced.

However, as will be discussed in Section 4.3, the contribution from the communal lands to the national economy is insignificant compared to the commercial lands.

A technocratic position of the relative efficiency of communal vs. commercial has been taken by Pierre Gourou (1991), who contends that private, individual tenure arrangements will lead to greater security, efficiency and productivity in Africa.

Gourou said that communal tenure protects the individual from indigence, but it is an obstacle to technical progress. In order to intensify agricultural production in Africa he said that privatisation of property rights was a prerequisite. He was convinced that a farmer would only invest capital and labour into their fields if they are the owners. Improvements, fertilisers, terracing, drainage, irrigation, will only be implemented if private property ownership is allowed and implemented (Gourou, 1991). Gourou's work was, however, based on agriculture in tropical Africa and the conditions in Namibia are certainly not comparable and the advice not necessarily appropriate.

In a study of the African economic crisis, the World Bank similarly argues that private property is a key incentive for farmers to invest in land improvements. Agricultural

modernization combined with population pressure will make land titling necessary (World Bank, 1989).

Paul Harrison (1987), in *The Greening of Africa*, links the problem of desertification to insecurity of tenure. He suggests that privatisation could help in the battle against desertification.

The argument is however not conclusive and there is much contradictory evidence which suggests that land titling has not had beneficial impact in certain case studies (Basset, 1993).

Communal tenure systems continue to be cited as a structural feature of environmental degradation in Africa. Much of the literature on common property resources blames herders for abusing the privilege of grazing their (private) animals on (communal) ranges by overstocking. The resulting 'tragedy of the commons' becomes manifest in land degradation. An often proposed solution is the privatisation of the commons.

However, the 'tragedy of the commons' assumes that communal lands involve unregulated access to rangelands. In practice, most pasturalists do in fact have traditional responsibilities and obligations to the communities to which they belong and are not purely self-seeking (Basset, 1993).

Shifting agriculture often becomes unsustainable when population densities increase beyond a threshold. When land degradation occurs, it is sometimes characterised as the inevitable outcome of a tenure system that gives farmers no long-term interest in the land and thus encourages them to exhaust rather than conserve it. In economic terms, the cultivator is said to lack incentives carefully to husband the holding; he does not have property rights that internalize the costs and benefits of conserving or failing to conserve the land. It is not clear that this is in fact the case. When the necessity has arisen, most indigenous tenure systems have readily recognized long-term exclusive rights in land for farmers or households (Bruce, 1993).

One of the basic assumptions held by the tenure evolution theorists is that the progressive commercialisation of agriculture inexorably leads to the individualisation of rights in land (Uchendu, 1970). More recent researchers have challenged this view suggesting that the traditional constraints to communal farming such as investment security, obtaining credit and land transfers are not as serious a problem as is sometimes expressed (Cohen, 1980; Bruce, 1993)

Tenure reform is not a cure-all for improving African agricultural performance. This is not to say that tenure constraints do not exist. Bruce (1993) does argue that there may be a need to modify certain features of indigenous systems when these changes are justified. But rather than attempting to replace these systems with European models, tenure reform strategies should build on the strengths of indigenous systems. Moreover, what appears to be a tenure constraint might in fact be a non-tenure-related problem requiring a non-tenure solution (Bassett, 1993).

In an evaluation of collective agriculture in Ethiopia, Rahmato (1993) points out that collective agriculture, even under the best of circumstances, has severe limitations. So too does peasant production whose long-term developmental prospects are not as bright as its admirers make out. In particular, independent cooperative enterprises can be effective in certain areas of specialised agriculture that require capital investment and group labour and where production is geared largely to the market. Ideally, he suggested a combination of individual peasant production and 'associated production' which emphasises association through free will.

By placing often culturally diverse settlers onto government farms and expecting them to produce under a collective system which is imposed from a central government level, the chances of resettlement succeeding are severely limited in the Namibian context.

Bruce (1993) acknowledges that economies of scale no longer provide a credible argument for skewed distribution patterns. However, the studies which suggest this were conducted in climates very different from that of Namibia such as Kenya and

Sierra Leone (Levi & Havinden, 1982). In Namibia economies of scale do exist because small farms cannot support economically viable herd sizes.

Namibia's Food Production

Other than its meat and fish production for the local and export market, Namibia imports most of the vegetables, maize and wheat needed to feed its population. All agricultural machinery and production inputs are imported, mainly from South Africa (Moyo *et al*, 1993).

The Emergency Management Unit (EMU) of Namibia recently reported that over 231000 people in Namibia will need food aid due to poor crop yield in 1998.

The country's total national coarse grain production for 1997/98 has been projected at a mere 53 200 tons, way below the record 166 400 tons last year. In the Caprivi region, the area planted this season is 14 600 hectares, which is only 58% of last years 25 200 hectares. In the Kavango region, only about half of last year's area has been planted. The cabinet recently approved a National Drought Policy and Strategy which seeks to establish an independent and permanent National Drought Fund to efficiently finance drought relief programmes (*Cape Times*, 1998b).

It is the communal areas which have suffered the most due to crop failure as production of cereals is expected to be far below self-sufficiency levels during the 1997/98 season. The resettlement programme has resulted in the creation of more subsistence farmers trying to eke an existence out of the harsh Namibian environment. Unless they can enter the commercial farming sector, the numbers of drought prone and poverty stricken families will increase. And yet the Namibian environment is unsuited to the establishment of further commercial farmers due to the limited rainfall. While certain areas can be farmed more intensively, the wetter areas of the country are already under considerable cultivation.

Even if Namibia were able to achieve self sufficiency in food production during most

years, the certain occurrence of droughts would ensure that at certain times Namibia would always be reliant on other countries for food. In some regions six out of seven years can be classified as drought years (Shumba, pers. comm.).

Although Namibia is the driest country south of the Sahara, looking to the rest of Africa as a source of food is not entirely problem free and global trade is necessary.

It is estimated that for the entire continent 60 to 70 percent of the land is not suitable for either livestock or crop production due to deserts, mountains, rainfall, poor soils, and disease (Cohen, 1980). One of the reasons advocated to explain Africa's dismal economic performance is the unpredictability of the land and Africa's particularly harsh set of natural circumstances (Harrison, 1987).

Sub-Saharan Africa is currently in the throes of an agricultural crisis. With a food sufficiency ration of less than 85 percent, sub-Saharan Africa is the only region in the world that does not produce enough food for its own people (Okoth-Ogendo, 1993). The reasons for this are externally and internally induced by historical, social and political distortions and peculiarities (Okoth-Ogendo, 1993) as well Africa's particularly harsh range of environmental conditions (Harrison, 1987).

Comparing agricultural production of Namibia with other parts of Africa is difficult cause of the above-mentioned distortions. However, agricultural potential of Namibia is certainly lower than other countries because of its comparably dry climate (Moyo *et al*, 1993).

Much of South Africa is also unsuitable for crop farming because of low rainfall. The UN estimates that 90% of South Africa's land is vulnerable to soil erosion and land degradation - a process that results from the pressures of human activities such as overgrazing, intensive farming, deforestation and poor irrigation on the land (Eveleth, 1998).

Despite this, the National Crop Estimates Committee of South Africa estimated that

the 1998-99 commercial maize crop will be 7,416 million tons (*Cape Times*, 1998a). This dwarfs Namibia's 166 400 tons coarse grain production in a good year.

While the entire subcontinent will face food shortages due to drought at one time or another, different regions experience different conditions. Therefore, rather than trying to be independent of the other nations in the production of food, Namibia should be trying to build trade relations with the other nations to ensure that food can move quickly and efficiently to where it is needed most.

The Southern African Development Community's regional food security unit has said that this year the subcontinent faces a maize shortage of 1,35 million tons because of erratic rainfall and reduced plantings. Zimbabwe, Zambia, Angola, Namibia and Lesotho face shortages, while South Africa, Mozambique and Tanzania could have surpluses (*Cape Times*, 1998d). Ideally, free trade should ensure that the maize can be traded from those nations with surplus production to those nations with a deficit between need and production.

Countries with higher rainfall than Namibia such as Angola and Zambia are often seen as potential bread baskets for Africa. Once their political environment stabilises, they would have lower production costs than Namibia and could become a source of competition or a source of cheap food products.

For example, in Angola, of the non-forested land of about 63.5 million hectares, 40 per cent has a high agricultural potential (areas with more than 850 mm of rain per annum), 45 percent has medium potential (rainfall between 600-850 mm per annum) and the remaining 15 per cent has a low potential (less than 600 mm of rainfall per annum) (Moyo, 1993).

Given this rainfall regime and natural environment, Angola definitely has a greater natural comparative advantage in the production of agricultural products than Namibia.

4.2.4 Conclusion

Within the next decade or so it is expected that a majority of the world's 5.5 billion people will become urban. As a result, a minority, and a declining one, will be responsible for feeding the rest. Far more people will be involved in 'the food industry' than in the growing of food. This process, of rural-urban migration, has been underway since the beginning of the industrial era and has required an ever more intensive cultivation of the land (Seabrook, 1993).

Increased intensification and expansion under the current agricultural model is not possible in Namibia. Alternative uses of the land such as game farming need to be considered. Game farming requires considerable initial capital expenditure but it can generate six times as much meat as conventional cattle farming (Steel, pers. comm.).

Land degradation and a reduced ability of the environment to support agricultural production as evidenced in Namibia is indicative of a renewable resource being used in a non-renewable manner. This undoubtedly violates one of the biophysical principles of sustainability. In order to farm in harmony with the Namibian environment, it is essential to observe the natural carrying capacity of the land. While intensification is desirable from an economic, social and political perspective, the nature of the Namibian climate prevents this from becoming a realistic alternative for a development programme.

4.3 ECONOMIC SUSTAINABILITY

4.3.1 Background

Namibia has a resource-based economy which is highly capital-intensive and accounts for much of the GDP, government revenues, and foreign exchange earnings. The pillars of Namibia's economy all depend on the resource base - mining, agriculture (mainly livestock), fisheries, and wildlife-based tourism (Lange, 1997). Although

Namibia has sound economic policies and political stability, its small widely dispersed domestic market has proven to be an obstacle to development of industry in the country. Much of the country's food and manufactured goods requirements are met through exports (MPhil, 1997).

4.3.2 Approach taken by Government

According to an Oxfam report (1996) the Namibian Government sees itself providing enabling mechanisms for growth, such as the social, legal, financing and physical infrastructure.

The incentives provided particularly support merchandise exports, diversifying ownership of productive resources in the crucial fishing industry, as well as prospective support to broaden the scope of tourism to benefit poorer rural communities. The aim is to expand from Namibia's present narrow production base in agriculture and mining, with special support to opening up ownership prospects for previously deprived Namibians in the fishing, fish processing and tourism sectors - the main generators of growth since independence in 1990. In theory, the younger generation, already leaving the land in large numbers to seek urban employment, will in the medium to long term find urban employment in the industries and services being promoted (Oxfam, 1996).

The Namibian Government has compiled the First National Development Plan (NDP1) as the first medium-term national development strategy for Namibia for the period 1995 to 2000. This is intended to overhaul the dual nature of the economy and to promote economic development which "*is the only guarantee for peace and prosperity, eliminate unemployment, poverty, hunger, disease and ignorance and improve the living standards of all Namibians*" (GRN, 1995).

The NDP1 sets out a number of ambitious objectives to develop the Namibian people and the Namibian economy. In its preamble the NDP1 acknowledges the fact that

there is a need for economic restructuring and diversification which means the establishment of new industries, new processing plants, new mines, new tourism enterprises, improved agricultural production, more schools and health clinics.

The Government does seem to have the right intentions when it comes to promoting a diverse range of industries. To what extent this is merely political rhetoric and how much is actually implemented on the ground is difficult to determine. The Resettlement Programme does not follow this open economy development logic and limits development to the agricultural sector only. Many of the reasons for this are primarily political as will be discussed in section 4.5.

According to Hansohm *et al* (1998) some of the features of the Resettlement Programme such as land reform, increased access to credit, training, research and extension services can increase productivity and incomes within the agricultural sector. He, however, noted that the uncertainty of rainfall in the Namibian environment will continue to impose a limit on profitability and the readiness of farmers to invest.

4.3.3 Economic Conditions

As a result of structural changes since the 1980's the agricultural sector has stagnated and its contribution to GDP has fallen to 9.3% (GRN, 1995), although it employs roughly half the labour force, three quarters of those in communal agriculture. This difference between the contribution to employment and GDP reflects the low levels of productivity and incomes, especially in communal agriculture. This in turn poses a severe limit to non-agricultural activities in the rural areas. (Hansohm & Mupotola-Sibongo, 1998).

Roughly 75% of the land area of the country is used for livestock ranching and yet livestock and related industries only accounted for roughly 9% of GDP and 16% of exports in 1995 (CSO, 1996).

Unemployment is a critical issue in Namibia with half the adult population unemployed. The situation in the labour market is bound to become even more severe during the coming years, as the labour force grows owing to the high population growth rate. It is expected that about 250 000 additional entrants will join the labour force between 1995 and 2000 (GRN, 1995:36). In the context of government rationalization and of the limited growth of the formal sector labour force, self employment and employment in the non-agricultural 'informal sector' will have to absorb an increasing portion of total employment (Hansohm & Mupotola-Sibongo, 1998).

Namibia continues to be dependent on the export of its natural resources. A significant proportion of manufactured exports are processed agricultural resources (Hansohm & Mupotola-Sibongo, 1998). Therefore, any drop in agricultural production, primarily beef, will mean that not only will domestic prices rise, but exports will drop and this source of foreign exchange will be diminished.

Hansohm (1998) suggested that trade liberalisation will open up new opportunities for Namibian exports which are based on comparative advantage. At the moment Namibia does have a comparative advantage in the export of beef products but there is little scope to sustainably increase this because Namibia can only support the current low cattle densities.

The domestic and international economic conditions under which farmers, especially commercial farmers, operate are dynamic and create a continuously changing environment. Imminent changes include the substantial reduction or even elimination of long-established drought relief programmes for commercial farmers, the eventual end of Namibia's preferential access to European Union markets, and the liberalisation of trade between South Africa and the European Union (EU), threatening Namibia's export market in South Africa. Implementation of the General Agreement on Tariffs and Trade (GATT) would most likely reduce prices for livestock products in Namibia by some 20 percent (Lange *et al*, 1997).

These new economic conditions bring added urgency to improved understanding of the changing environmental conditions faced by farmers.

4.3.4 Tax Revenue

In the mining of non-renewable and renewable resources, the government charges what is effectively a tax for the right to mine or to fish. This tax collection ensures that the country reaps the benefits of its resources and prevents the private individual from making abnormal profits through monopolistic access to a particular resource. This revenue can then be used to provide basic services, education, and training to enable Namibians to harvest/mine/utilise other resources.

In agriculture there is no such charge for use of the land in Namibia. Tax rates are in fact very favourable for commercial farmers and non-existent for subsistence farmers. If the Government were to charge a levy for the use of land for agricultural purposes, no doubt the majority of farmers would be unable to make a living. The benefits that agriculture therefore generates for the Namibian economy are limited compared to other industries which harvest primary resources.

Earnings from Namibian mineral exports, for example, are about $700 million a year, giving tax revenues of $72 million during 1996-97 (Spicer, 1998a)

As mentioned above government receives little or no revenue from communal farmers, while commercial farmers (now they are losing tax breaks) contribute to revenue, and, through beef and mutton exports, to the balance of payments. This has important implications for development projects involving agriculture. It is imperative that they do not create more subsistence farmers on previously commercially viable land. Unless the settlers can become market orientated and can generate tax and ideally foreign exchange, the Government is increasing their burden by providing services to more people who cannot pay for them.

4.3.5 Economic Sustainability of Agriculture

A particularly scarce resource in Namibia is water. Panayotou (1993) suggests that Governments need to introduce policies which engender sustainability. Public goods in a free market generate negative externalities which are costs which are not incurred by those who benefit from the use of a resource (Dohan, 1977; Hjelte *et al*, 1977). Governments can overcome this by internalising these externalities into the price of a resource. For example, the price of water should be dramatically increased in order to encourage people to use it more efficiently and to reflect its actual inter-generational value.

The problem in Namibia is that many people need access to cheap water to survive. It is necessary that all people have access to affordable, clean drinking water. However, for irrigation purposes, the cost of water should be increased to ensure that its use is limited to levels which are sustainable. This would further limit the viability of agriculture in the south where dryland crop farming is not possible.

The cost of drought relief needs to be included in the cost of promoting any agricultural project. In some parts of Namibia 'drought' can occur in six out of seven years (Shumba, pers. comm.). If drought relief is provided, the Namibian taxpayers are effectively forced to cover the risk of an event which will occur with considerable certainty.

Giving people ownership (secure tenure) of the land that they are farming is another method of applying sound economic principles to ensure that land degradation is reduced.

Government can use such policies and principles to correctly price the environmental degradation associated with various sectors and thereby direct development activities away from areas where environmental degradation will occur. Rather, activities which sustainably utilise resources will be promoted.

Government can uses methods to add a long term sustainability "force" to activities which give short term benefits at the expense of long term environmental degradation.

As Panayotou (1993) suggested, the aim is not to eliminate environmental degradation altogether but how to minimize it or at least to keep it consistent with society's objectives. This is an important concept when considering the development of people who are on the breadline and have a short term survival attitude. Government needs to support initiatives which are going to provide development solutions for generations to come.

4.3.6 Conclusion

Several Oxfam studies of rural Namibians have found that the overwhelming majority (especially of those under 40) name employment as their primary aspiration. This is a realistic outlook on their part. Unless in the next ten years large or small industrial development takes place to provide a living for that half of living Namibians who will come of economically active age, the result will be rural famine and massive urbanisation of an increasingly politically volatile number of unemployed (Oxfam, 1996).

Agriculture will doubtless continue to be the major source of employment and livelihoods, although, the scope for sustainable increases in primary production from communal land is limited and the potential for growth in commercial agriculture is even lower (National Planning Commission, 1993; GRN, 1995). Meanwhile, fishing and tourism are two of the fastest growing industries, and are the only two sectors anticipated to generate increases in jobs, foreign exchange, government revenue and national income during the period of the First National Development Plan (1995-2000). Mineral output will diminish over time as minerals are non-renewable resources, but meanwhile should provide resources for investing in building up other sustainable industry. More importantly, there is potential to diversify the economic use of natural resources into more profitable activities, involving higher value-added in Namibia. Tourism, based on wildlife and wilderness, processing of fish and other

animal products (such as leather), and farming of game and ostriches, can vastly increase the economic value of renewable resources in a sustainable manner (Ashley, 1994).

Given the natural environment of Namibia and its resulting economic environment, utilising agriculture as a development tool has limited potential. The beneficiaries are not able to utilise their farms to generate an income (MPhil, 1998).

Significant employment is not generated through agriculture as the land cannot support more people on a commercial basis than are utilising the land at the moment.

Agriculture is not the most efficient resource use of the land. Game farming or tourism could potentially generate much higher returns. Wildlife farming can generate six times the meat production levels of cattle farming (Steel, pers. comm.). The income generated through tourism can be considerably greater than farming and can employ more people. Both these ventures require greater initial capital investments, but they will provide more sustainable returns.

4.4 SOCIAL SUSTAINABILITY

This section will consider the following question: How suitable is agriculture to the upliftment of the Namibian people and what are the social implications of promoting agricultural projects?

It has been noted from international experience that agricultural settlement schemes, except in special circumstances, do not make good welfare programmes (Binswanger & Kinsey, 1996). A successful resettlement programme must maintain a balance between a settler's suitability and need.

In Namibia many settlers do not have inherent farming ability as is often supposed of all rural people. Many of the settlers were farm workers on commercial farms, but,

they have not been trained to apply different farming techniques as farming conditions change. Additionally, they were not encouraged to show initiative, nor were they involved in decision making (MPhil, 1998).

The Namibian poor are predominantly rural, principally in the north, mostly involved in subsistence farming with wage labour quite significant but poorly paid (Hansohm & Mupotola-Sibongo, 1998). What does this say about the success of communal farming in Namibia? They have certainly been neglected and sidelined from the mainstream of Namibia's economy, however, their land was never taken from them by colonial settlers. Population growth in the region of 5% has placed unsustainable pressure on the land.

The rural households and the poor spend a significant proportion of their income on agricultural products and food (Hansohm & Mupotola-Sibongo, 1998). Therefore the poor suffer the most when prices of agricultural products increase. This is likely to happen if existing commercial farmers are replaced by settlers who become subsistence farmers, as has happened with the existing Resettlement Programme (MPhil, 1998).

Agricultural incomes are so low and variable in the communal areas that cash remittances and pensions are essential supplements for most families (Hansohm & Mupotola-Sibongo, 1998). 17% of rural households regard these as their main source of income (Central Statistics Office, 1995). Communal areas are therefore effectively a drain on central government instead of being a significant source of revenue.

Agriculture employs 50% of the workforce and directly or indirectly supports about 70% of the population. It is estimated that 75% of the poor are dependent on agriculture for at least some of their household consumption needs. The contribution of agriculture to GDP, however, remains very limited - at around 10% - and most agricultural households have to complement their agricultural income with other activities. These features reflect not only the low technological level of many of the existing farms, but also more basic factors such as the aridity and uncertainty of

rainfall. Thus, while strategies of poverty alleviation have to pertain to agriculture because that is where most of the poor are, "*the scope for development based on agriculture, as appropriate for most African countries, will remain limited.*" (Hansohm & Mupotola-Sibongo, 1998).

It is therefore evident that the Namibian Government is going to have limited success using agriculture as a development tool. Given the nature of Namibia's environment it is unlikely that settlers who are given land are going to be able to easily improve their standard of living. The evidence presented in the baseline report (MPhil, 1998) demonstrated that poor people who were given an opportunity to engage in agriculture were not necessarily better off. They did not instantly become in control of their destinies and were still a significant burden on the government. It is essential that beneficiaries of a development programme are given choice and are involved in deciding how they are to be assisted by government.

In order for the settlers to be able to improve their lives they need to be engaged in an economically viable activity. Agriculture in the Namibian environment does not fulfill this criteria.

4.5 POLITICAL SUSTAINABILITY

It is argued that one of the primary reasons for the bush war of the 1980's in Namibia was the inequitable distribution of land (MLRR, 1997c). Now that power has been transferred to the majority there is an expectation amongst certain groups in Namibia that they will be receiving land.

However, the ruling party in Namibia, SWAPO, has its major support base in the rural areas of Ovamboland which was never dominated by white farmers as happened in the south. Therefore, land reform, while regarded as important, is not a priority issue for the government. This can be seen by its relatively small budget allocation of N$ 20 million a year for purchasing land for redistribution.

Therefore, while land reform has become a burning political issue amongst certain interest groups, delivery of change on the ground is limited because of economic realities (Oxfam, 1996).

There have been recent calls from within SWAPO and from the Namibia National Workers Union (NUNW) to accelerate the process. Sam Nujoma, the President of Namibia, said in January 1998 that there was a need for Government to determine the exact land requirements for the people of Namibia, and to work towards acquiring 20 per cent of that land by the end of 1998, and 80 percent, if not 100 per cent, by the year 2000 (Moyo, 1998). It is difficult to see how the government will achieve this given the low budget allocations which the Resettlement Programme has received. Achieving this goal is also dependent on how much land actually needs to be acquired.

A number of SWAPO parliamentarians, together with the NUNW, have called for the Constitution to be revised to allow the Government more leverage to take over land from mostly white landowners.

The opposition party, the Democratic Turnhalle Alliance (DTA), and The Namibian Agricultural Union (NAU), on the other hand, have strongly criticised this suggestion, and have warned Government to carry out the land redistribution exercise with caution (Shigwedha, 1998). The NAU, which represents commercial farmers, has expressed particular concern that resettling thousands of people on commercial land would result in the destruction of a fragile ecology and economy, thereby exacerbating poverty. Although it supports the Government's National Land Use Policy, in particular the different land tenure systems which give specific farmers right to own land thus enabling them to acquire credit from financial institutions, the NAU has said that these objectives would not be achieved by increasing communal farming areas (Moyo, 1998; *Argus*, 1998; Kayser, pers. comm.).

4.5.1 Namibia and Regional Co-operation

Namibia is part of the Common Monetary Area (CMA) with South Africa, Lesotho and Swaziland, of the Southern African Customs Union (SACU) with the same countries plus Botswana, and of the Southern African Development Community (SADC) with its 13 member states in the region. These organisations are all presently in a state of transformation. Their formation was largely motivated by South Africa's exclusion from the world trade arena and the other Southern African countries' need to form a unified force to reduce their dependence on South Africa. Now that South Africa has become a member of these organisations their function and structure is changing, although the end result is still uncertain. Namibia is also a member of the World Trade Organisation (WTO), and is thus committed to a process of gradual trade liberalisation (Hansohm & Mupotola-Sibongo, 1998).

Bill Clinton, the President of the United States of America, has recently called for the WTO to move "*as fast as the marketplace*" to create trade accords and bring down barriers to trade, particularly in agriculture (*Cape Times*, 1998c).

South Africa is proposing to have a free trade protocol in the Southern African Development Community by 2006. This would involve South Africa, by far the major economic power in the region, abolishing almost 80% of import tariffs within five years. SADC trading partners would phase down more slowly. Only 10.1% of South Africa's imports are from the SADC, the bulk being minerals, precious stones and metals (South African Press Association, 1998).

Given this regional trade environment, two main trends can be observed: On the one hand, there is a move towards more economic integration, on a regional as well as global scale, the benefits of which are increasingly being recognised in Namibia as elsewhere. On the other hand, there is also a tendency in Namibia towards 'economic nationalism', acknowledging more benefits in a policy which emphasises independence, based on the historical experience of fear of domination by South Africa. In this context, concepts of self-sufficiency, for example in the fields of food

and energy, are proposed and actively implemented (Hansohm & Mupotola-Sibongo, 1998).

Economically Namibia is still strongly dependent upon South Africa. This influences the range of political and economic tools available to the Namibian Government. For example, their currency is linked to the South African Rand and Namibia has no independent monetary policy. It is this environment that no doubt encourages Namibia to strive to become self sufficient in basic food production. A reduction in dependency upon South Africa will enhance Namibia's national sovereignty even if food production is an economically inefficient means to achieve this.

This drive for economic independence can be seen in one of the NDP1's main development objectives which is to achieve self-sufficiency in basic food crops (GRN, 1995).

However, Botswana, with a similar dry climate to much of Namibia (Moyo *et al*, 1993), has acknowledged the economic costs of attempting to achieve self-sufficiency in food production. The costs of producing sorghum, the main crop are double the import costs from adjacent countries. Attempts to achieve national self-sufficiency in cereal production through their Arable Land Development Programme (ALDEP) and the Accelerated Rainfed Agriculture Programme (ARAP) are now accepted to have failed (Ministry of Agriculture, Botswana, 1990).

Because of Namibia's desire to become self sufficient in food production farmers are given incentives which other sectors of the economy do not receive. The white commercial farmers have only been able to make the investment which they have because of government subsidies and loans on very favourable interest terms (Moyo *et al*, 1993). This is a global phenomenon whereby farmers receive tax incentives, subsidies, drought assistance and government funded research and extension assistance. Farmers often have a significant political influence because of the geographical structure of the electoral constituencies.

The talk amongst southern African leaders is of attracting foreign direct investment and shifting from resource-based activities to developing export-led manufacturing industries (Lamont, 1998). At a conference held in May 1998 by the World Economic Forum (WEF) in Windhoek, Southern African leaders acknowledged that it is necessary to open markets to world trade and conform to free market good sense and good governance otherwise Southern Africa will remain a decade behind the rest of the world and outstripped by other more dynamic emerging markets. There was also broad agreement on reducing government involvement in the economy (*Ibid.*).

In spite of these public statements, the Namibian Government still seems to be focused on promoting agriculture as a means to achieve some of its development priorities.

4.5.2 Conclusion

In the Namibian situation, SWAPO is in the fortunate position of having the support of the vast majority of the electorate. In the 1989 elections they won 57% of the vote which increased to over 70% in a second round of national elections held at the end of 1993 (Oxfam, 1996). The implication of this is that they can take a long term view and do not have to produce short term unsustainable benefits for a fickle electorate. They can afford to make what some would consider to be politically unwise moves in order to implement solutions that will be sustainable.

If the Namibian Government redistributes land it is imperative that they state what this is likely to achieve. Land reform will help to reduce the inequities in land distribution which are so evident in Namibia. However, it will not automatically result in the reduction of income differentials between the white and black populations.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

Agriculture in Namibia is essential and to some extent viable. However, it is highly constrained by the natural environment. Most of Namibia can only support low density livestock grazing. Therefore, more people cannot be placed on the land and be expected to farm more intensively without compromising biophysical sustainability. Certain parts of the country do enable dryland crop farming. However, this land is either in the communal areas or will be more expensive to purchase. Additionally, all land in Namibia is always vulnerable to drought and production levels are highly unpredictable.

If, in order to give settlers land to enable them to farm, means that existing farmers and farm workers leave the land, then there is no net development.

If land is being redistributed to achieve political goals, this should be acknowledged and not thinly disguised as a means of developing the Namibian people.

The costs of disrupting existing agricultural production should be identified and acknowledged. Much of the agricultural production in Namibia is proving to be economically unsustainable and further investment into conventional agricultural projects should be critically examined.

Based on the experiences of some of the existing resettlement projects, the social benefits of the agricultural development projects have been limited and the long term prospects of achieving sustainable improvements in living standards, independent of government support, are not encouraging (MPhil, 1998).

Rural-urban migration is to a large extent inevitable. To deliberately enforce an agricultural lifestyle upon people may be taking a socially retrogressive step in the

long term. Not that it is necessarily desirable or possible to emulate the western industrial model. It has been argued, sometimes vociferously, that the western experience is not replicable because the western way of wealth creation has depended on pressing the rest of the world into its service (Seabrook, 1993).

However, despite the downfalls of industrial society, alternatives such as urban resettlement need to be considered. For example, it was necessary for many people in Lesotho to be resettled when the dams built for the Lesotho Highlands Water Scheme flooded their land. They could choose between receiving new land or being resettled in Maseru (the capital of Lesotho). Often the new land was higher up the slope and therefore inferior for agricultural purposes. Many of those being resettled therefore chose to go to Maseru. As compensation for their lost land they received houses in Maseru. The primary reason why they chose this option is that they could live in one section of the house and let out the rest of the house, thereby gaining employment as landlords. While a rural lifestyle can be romanticized, real alternatives such as this need to be considered in the Namibian context.

What is being suggested is not that agriculture should be discouraged, *per se*, but rather that it is difficult to practice agriculture more intensively than is currently being achieved in Namibia. This limits the potential of agriculture as a sustainable development tool. Agricultural options can be found for those people who have an aptitude for agriculture and the knowledge and means to practice it. But, for many others it is unrealistic to expect them to make a livelihood as farmers. Ideally the government needs to provide choice, a vital part of the development process. Enable marginalised people to formulate a range of reasonable alternatives and then allow them to choose in which activities they would like to be involved.

Rahman (1993) warned against the potential exploitative nature of development which may result in people with traditional lifestyles becoming "*inferior citizens in an alien environment.*" Development is not simply a matter of overcoming the problems of poverty through the acquisition of economic goods. Alternatives to this model must include endogeneity; non-hierarchical relationships; the generation of knowledge

which is relevant to the people and gives precedence to the values and culture of the people themselves.

Encouraging agriculture is not necessarily going to prevent this 'alienation' from occurring. This study is not advocating moving contented rural people into industrial slums. Rather, there needs to be a focus on using the skills that the people have and which can be used sustainably in Namibia.

One group of settlers involved in the Resettlement Programme are the Bushmen. They are often referred to as the best trackers in the world, a fact that has been abused by the South African Defence Force in the past. The Busmen often prefer to go and search for 'veldkos' rather than to work on the resettlement projects and their involvement in resettlement programmes has not been very successful (MPhil, 1998). Rather than forcing them into an agricultural existence alternatives should be considered.

An alternative development programme has been successfully implemented in Bushmanland in the north eastern part of Namibia. A Bushmen community has started an ecotourism project with the assistance of Flip Stander from the Namibian National Parks Board. Foreign tourists pay to spend time in the bush and are exposed to the culture and skills of the Bushmen. The Bushmen demonstrate their tracking and hunting skills and share some of their knowledge of the bush. Projects such as this can enhance traditional skills and utilises them in a sustainable manner. There are many difficulties with such a project as there is often an imbalance between the party that organises the finances and the tourists and the traditional community. It is also necessary to avoid enforced primitivism where the role of the Bushmen in the project is limited and they are not involved in managing the project (Stander, pers. comm.) but alternatives such as this need to be explored if development is to be sustainable.

Anyone who is making a living out of agriculture should be supported and certainly not encouraged to join the '*evils of the industrial society*' so vividly described by Jeremy Seabrook in *Victims of Development* (1993). However, the 'beneficiaries' of

the Resettlement Programme are not necessarily agriculturalists and there is no space for them in the sensitive Namibian environment. Land which is not utilised by absentee landlords could be reallocated to would-be farmers. However, the number of people who can be catered for in this manner is limited.

Tourism and game farming are ideally suited to Namibia's unique environment and it is likely that Namibia does have a comparative advantage in these activities. Money generated through these activities could be used to purchase agricultural products from other countries with a more favourable climate for crop growing, for example Zambia which is often referred to as a potential bread basket for the whole of Southern Africa.

Job Creation

There is an urgent need for job creation in the Namibian economy. It cannot be expected of agriculture to absorb the surplus people from communal lands, ex-combatants and other landless people. To aggravate the existing problem there has recently been a major loss of employment and foreign exchange through the closure of the Tsumeb copper and lead smelter and mines. Additional to the loss of 2000 mine jobs (a quarter of the total mining workforce in Namibia) the knock-on effects of this event will be severe for the entire economy (Spicer, 1998).

It is not realistic to expect the Namibian Government to be a source of job creation. This is not the role of government and the Namibian Government has already overextended itself in this area and is looking to retrench civil servants. At the moment the Namibian Government accounts for 35% of total formal employment (GRN, 1995). This can be compared with Singapore which has one of the best public services in the world and yet less than 10% of the Singaporean workforce is in the civil service (Segar, 1998). If the Namibian Government reallocates funds for job creation programmes it will be taking them from somewhere else and other civil servants will be laid off. It is not up to 'big government, big business and big labour' to create jobs. Rather is necessary for them to create a climate conducive for existing

entrepreneurs to grow their businesses and for new entrepreneurs to open up additional enterprises. It is not feasible to give people houses and land if they cannot maintain them. Rather give jobs with which people can buy houses. The real need is to create enterprises which will generate jobs (Sunter, 1998a)

Some governments have implemented huge public works programmes to boost local demand and create employment. However, such programmes will not sustainably create jobs unless underlying causes of market failure are addressed. For example, Japan has tried to implement huge public works programme to slow the downward slide of its economy. This has not worked and the economy has gone into recession because of underlying faults in the credit system (Sapsford, 1998) and what has become know as 'crony capitalism', where government and business co-operate on a basis other than levels of efficiency, such as family relationships.

The role of Government should be played down rather than over-emphasised. Many market failures which lead to excessive environmental costs and inefficient resource allocation are a result of policy-induced distortions. The most cost-effective intervention for mitigating market failures is to improve the functioning of the market by eliminating policies that have significant environmental costs or that create perverse incentives leading to the depletion of resources and environmental degradation beyond the free-market level. Examples of this could include establishing secure property rights over resources, internalising the costs of external side effects through pricing and fiscal instruments (as was discussed with regards to water provision), encouraging competition, allowing the free flow of information and reducing uncertainty through more stable and predictable policies and politics (Panayotou, 1993). Rather than replace the market with government, there is a need to enhance the role of the market to be more all-encompassing. They can start by changing policies which are detrimental to both the economy and the environment - such as the promotion of the existing Resettlement Programme. The Resettlement Programme has generated few economic benefits and is likely to cause overcrowding on resettlement farms leading to the type of land degradation normally associated with the communal areas.

Financing Small Business

Government needs to focus on providing access to credit for small businesses. Ideally small business should be funded through equity, not loans. The main reason for the collapse of the Asian markets was business expansion based on credit. When growth slowed, the flaws in this approach immediately became apparent (Sapsford, 1998). One possibility is to create venture capital companies with a portfolio of township businesses that would be quoted on local stock exchanges, rather than individual business stocks (Sunter, 1998a). This could be done in conjunction with South Africa and other southern African countries who are all suffering from the same unemployment and wealth distribution problems. There is also a need for regional stock exchanges in smaller cities (*Ibid.*). One technology intensive alternative is to use the internet as a forum for potential borrowers and lenders to meet.

The venture capital sector of regional stock exchanges needs to promoted and adapted to increase accessibility of finance for new companies. Internationally there is increasing interest by large investors to include venture capital stocks in their portfolios. High risk does not necessarily chase away investors. Regional stock exchanges should utilise this trend and provide information on the venture capital sector and the companies within it in order to educate attract investors and entrepreneurs (Goocin, 1998).

In addition to encouraging venture capital, the Government must back new ventures and provide assistance to people from disadvantaged communities (Romero, 1998).

An example of this is a fund recently established in South Africa to provide financial assistance to emerging tourism businesses to assist them in promoting tourism to South Africa (Smith, 1998).

While solutions such as these would not necessarily be a means for the most marginalised rural communities to gain a livelihood, they could help to create employment and encourage entrepreneurship in the cities and towns of Namibia. The

positive effects of this should be felt throughout the country and will create real choices for people needing capital and looking for work.

Many of the alternatives to agriculture for rural people are highly capital intensive. For example, tourism, wildlife farming and vertical diversification into secondary farming industries such as canning, charcoal and sunflower oil production all have high start-up costs. It is essential that those people who are keen to engage in new ventures have access to capital or credit and knowledge resources.

Internationally, there have been many positive experiences of alleviating poverty and achieving economic growth through support for the small, medium and micro-enterprise (SMME) sectors (Maharaj, 1998b & 1998c).

One such experience is that of Accion International, a non-governmental organisation (NGO) network of credit programmes supporting low-income entrepreneurs in Latin America and the US. Last year Accion oversaw loans of $485 million to 310 000 low-income entrepreneurs in 14 countries. Its average loan size in 1996 was $575 (Maharaj, 1998b).

Its impact in Latin America has been profound. The organisation is influencing government development policy throughout the region. The striking success of micro-credit, particularly in Latin America and Asia is in stark contrast to the failure of labour markets globally to cope with chronic unemployment.

The focus on creating wage employment - the conventional strategy for attacking unemployment - is understandably shifting, at least in poorer countries, to self-employment in the informal sector. Accion estimates that this sector accounts for more than 50 percent of the economy in Lagos, Bombay and La Paz (Maharaj, 1998b). The data required to make such an estimate about Namibia does not exist. Research into the role of the SMME sector in Namibia would be helpful in directing funds into its promotion. In order for the Government to be able to make sound policy decisions, it needs to have access to sound research into all development alternatives.

If Namibia is to be serious about promoting entrepreneurship then they need to encourage skills development and entrepreneurial education at schools and at a tertiary level. One leader who has set a fine example in this regard is President Museveni of Uganda who has gone to the people, asked them what they needed to run their own businesses, and prioritised government expenditure accordingly (Sunter, 1998b). Namibia needs this kind of leadership which is focused on creating workable solutions for the future.

The Government needs to look at its own role in creating a conducive climate for entrepreneurs. Clem Sunter (1998b), a well known scenario planner, suggested some of the following ideas which a government could implement in order to encourage the development of small business:

- A corporation tax holiday for businesses up to a certain size (or even a graduated corporation tax similar to the graduated income tax);
- Minimising regulations to start and run a small business;
- A one-stop license-issuing shop;
- Roads for rural businesses to get their products to market;
- Outsourcing of government requirements to emerging businesses.

The government needs to provide development assistance to rural, labour intensive industries to create off-farm employment opportunities as an alternative to encroachment and destructive resource exploitation.

To be successful, the promotion of rural industries should build upon the basic features of rural areas: availability of raw materials, seasonality of labour supply, and dispersion of markets. The emphasis should be on restoring a competitive environment between the rural and urban areas by improving infrastructure, making credit available at competitive rates, providing technical assistance and market information and assisting in skills development (Panayotou, 1993).

Closing words

If the Namibian Government intends to successfully and sustainably use agriculture as a development tool it will have to strictly enforce the following criteria:

- The density of settlers cannot be too high;
- Settlers must only be resettled in areas where crop growing as well as animal husbandry is possible;
- Extensive government assistance must be provided with training and capital provision;
- Selection of settlers must be strictly based on their education and farming background.

Because Namibia does not have a comparative advantage in agriculture, any new entrant to the agricultural market will struggle. Therefore the above criteria are necessary to ensure some degree of success.

However, if these criteria are implemented then the cost per settler to the Government will be very high and only a small percentage of those wanting to be resettled will benefit. Additionally, those who are most destitute would probably not qualify and therefore the value of the programme as a development tool would be questionable.

Given Namibia's dry climate and poor agricultural potential, alternative means of developing the people of Namibia need to be earnestly researched and evaluated in order to ensure that the country's resources are used to their full potential and to the benefit of all Namibians.

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