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# HEALING THE LAND: MONITORING TRANSFORMATION AND AGRICULTURAL SUSTAINABILITY ON A WESTERN CAPE LAND REFORM PROJECT

**NAJMA MOHAMED**

**Submitted in fulfilment of the requirements for the degree of Master of Science**
**Department of Environmental and Geographical Science**
**University of Cape Town**

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# ABSTRACT

This thesis examines the viability of participatory monitoring in instituting a sustainable agriculture-based land reform programme in South Africa. The legacies of colonial and apartheid-era racial injustices have severely constrained access to land for agricultural production. Moreover, the impact of commercial agriculture on nature and society, warrants that alternative approaches to agriculture be investigated. Land reform provides a unique opportunity to motivate for social change, premised on both agricultural sustainability (land) and social transformation (life). Partnership-based models, such as farm worker equity share schemes, dominate land reform opportunities in the Western Cape. The Warmwater Farming Trust, a land reform project in the Western Cape premised on this model, formed the case study component of my research. Political ecology was adopted as the theoretical framework for linking structural underpinnings and the locale. Participatory research methods were employed to develop the indicator-based participatory monitoring system on Warmwater. These included farming systems research, participatory rural appraisal and sustainability indicators. The research shows that a range of factors, related to the structures in society, the nature of the locale, and local-level action underscore land and agrarian reform in South Africa. Moreover, the research provides important insights into the transformative capacity of partnership-based land reform models. Participatory monitoring holds benefits for the farmers of Warmwater by providing an opportunity to monitor changes related to land and life, and increasing their participation in planning and decisionmaking processes on the farm. Despite obstacles posed by structural constraints to land and agrarian reform, this thesis postulates three mechanisms to addressing the land-life dialectic. These include a consideration of new land reform models, a conflation of environmental and social justice considerations, and the promotion of local-level action geared towards social transformation and agricultural sustainability. The reconstruction of the South African landscape could be attained by adopting a participatory, sustainable agriculture-based land reform programme, which incorporates processes such as participatory monitoring.

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| | |
|---|---|
| ANC | African National Congress |
| DoA | Department of Agriculture |
| DLA | Department of Land Affairs |
| EJNF | Environmental Justice Networking Forum |
| FESS | Farm equity share schemes |
| FSR&E | Farming systems research and extension |
| FWES | Farm worker equity share |
| GEAR | Growth, Equity and Reconstruction |
| IIED | International Institute for Environment and Development |
| LAPC | Land and Agriculture Policy Centre |
| NGOs | Non-government organisations |
| NP | National Party |
| PRA | Participatory rural appraisal |
| RDP | Reconstruction and Development Programme |
| SALDRU | South African Labour Development Research Unit |
| SA-PPA | South African Participatory Poverty Assessment |
| UNCED | United Nations Conference on Environment and Development |
| WFT | Warmwater Farming Trust |

# - CHAPTER ONE -

# GEOGRAPHY FOR CHANGE: THE POLITICAL ECOLOGY OF LAND AND AGRARIAN REFORM IN SOUTH AFRICA

The development drawcard of the 1990s, sustainable development, has resulted in attempts by governments, development agencies and non-governmental organisations (NGOs) to forge closer links between the objectives of economic growth, equity, justice, quality of life and environmental sustainability. This has led to a re-evaluation of human-environment interactions within the various sectors in society, such as fisheries, industry, and agriculture. In transforming conventional agricultural systems much criticism has been levelled at the 'hidden' costs which perpetuate global and societal inequality and leads to negative effects on the environment and human health, borne out for example by injudicious pesticide use. In addition, natural resources are not used fairly or efficiently, leading to ecologically disastrous consequences for nature and society alike. In evaluating the viability of more environmentally sustainable and socially just production systems, researchers and practitioners have developed a number of land use concepts and practices aimed at restoring the integrity of the land, feeding the soil and working with nature. Thus an alternative approach, that of sustainable agriculture, emerges.

Within South African society, the agricultural sector is characterised by severe inequalities with the majority of land under commercial cultivation by white farmers[1]. The territorial segregation of white and black farmers, entrenched by apartheid legislation, resulted in the dispossession of many subsistence black farmers. Land and agrarian reform have been placed high on the agenda of national priorities in the post-apartheid South Africa. Many dispossessed communities are instituting land claims in the hope of once again being given access to land. One such case, the Warmwater Farming Trust, a land reform project in the Western Cape Province, was established in 1996 (Plate 1.1.; Plate 1.2.; Plate 1.3.). For the fifteen families living on this deciduous fruit farm, the land reform programme has provided an opportunity to increase their stake in the land. These former farm

[1] The racial classification used in this thesis denotes the apartheid classification which governed all spheres of life, applied here specifically to the ownership and distribution of land. These terms, white, black and coloured, are used purely to describe the land ownership and distribution patterns which have profoundly shaped the South African landscape.

workers and members of the company, Nuwe Begin ('New Beginnings'), are land reform beneficiaries with extensive experience on farms in the Western Cape province. However, for the land reform programme to succeed, much more than rights needs to be addressed. The current debate on land reform provides a unique opportunity in which to motivate for changed agrarian practices, so that not only socio-political and economic transformation, but changed land-use practices and ethics are instituted (Auerbach, 1993; Lebert, 1994). The negative impact of apartheid-era conventional commercial agriculture on both society and nature, has been well documented. Sustainable agriculture approaches should therefore be prioritised within the land reform programme. In addition, the land reform context provided by the case study brought the socio-political and ethical issues of agricultural sustainability to the fore.

Researchers writing on the land reform programme in South Africa, have provided motivations for indicator-based participatory monitoring systems which would ensure that beneficiaries engage in sustainable land use planning and practice (Wynberg, 1995; Cooper *et al.*, 1996; Marcus *et al.* 1996). The use of indicators in participatory monitoring systems therefore presents an opportunity to motivate for an agricultural system, based on a range of principles such as social justice, grassroots participation, environmental well-being, economic viability and quality of life. In addition, it enables communities to track the transformative effect of land reform, both on the quality of their lives as well as that of the natural resources upon which they depend.

The society-nature interface observed in the South African landscape is complex, and both the structural environment, such as the pre- and post-apartheid legislative and institutional environment, as well as physical environmental processes, determine the nature of the access to and use of land and agrarian resources. The specificities of the Western Cape province, in which the Warmwater Farming Trust is located, will also be elucidated. In my thesis I will investigate the viability of an on-farm participatory monitoring process in instituting sustainable production systems on a land reform project in the Western Cape. Moreover, the potential of local-level action in contributing to the transformation of agricultural production systems, within the context of land reform in South Africa, will be considered.

Plate 1.1. : Picturesque surroundings of the farm, the Warmwater Farming Trust


Plate 1.2.: New ground - the Warmwater Farming Trust

Plate 1.3.: The orchards on the farm

In this introductory chapter I provide an outline of the main theoretical underpinnings of the research. The rapprochement between the environment and development discourses is epitomised by the widespread adoption of the term, sustainable development. The contradictions of sustainable development, and its inability to formulate a development imagery, premised on fundamental social change, is also highlighted. In its stead, a sustainable livelihoods approach, grounded in a power-sensitised framework has been adopted. I then relate this 'greening' of development theory to the human-environment relations literature, the field of geographical enquiry which forms the basis of this research. Developments in the field, particularly in the new theoretical constructs of political ecology and environmental justice, lends itself well to redressing the South African dynamic. The potency of the political ecology framework of analysis adopted in this thesis include its application to understanding the political economy of land and agrarian questions in South Africa, strengthening of the structure-agency dialectic, and focusing on the locale. It has enabled me to address a range of issues, such as national land policy formulation processes and the identification of indicators by the farmers of Warmwater. An outline of my thesis is provided at the end of this chapter.

## 1.1. RE-IMAGINING DEVELOPMENT

> 'Green' development is not about the way the environment is managed, but about who has the power to decide how it is managed. Its focus is the capacity of the poor to exist on their own terms. At its heart, therefore, 'greening' development involves not just a pursuit of ecological guidelines and new planning structures, but an attempt to redirect change to maintain or enhance the power of the poor to survive without hindrance and to direct their own lives. 'Sustainable development' is the beginning of the process, not the end.
>
> (Adams, 1995a, 202)

Critics of the sustainable development mantra have often intimated its superficial commitment to addressing the notion of unequal power relations, both within and between countries. An emphasis on 'management' interventions, further commodifies nature and ensures that "capital, not nature and culture", is sustained (Escobar, 1996, 49). Thus, the concept of sustainable development has, in many instances, seen the introduction of 'environmental managerialist' strategies which pay scant regard to changing the fundamentals of development directions (Redclift,

1992). To understand the basis of sustainable development, I will firstly consider the increasing *détente* between environment and development and the different dimensions of sustainable development. Thereafter, I will evaluate whether this synthesis has re-imagined the modernist discourse of development or whether it implies fundamental change.

In Stockholm in 1972, the United Nations Conference on the Human Environment, signified one of the first moves in reconciling environment and development objectives. However, just a few months prior to the conference, a meeting was held with the leaders from the South to assuage their concerns that the conference would focus on Northern, primarily industrial, concerns (Adams, 1995a). A meeting in Mexico in 1974 achieved what Stockholm failed to do, i.e. to address environmental problems from a Third World perspective. But this meeting failed to advance into structures of the type associated with the higher profile North-South gatherings such as Stockholm in 1972 and Rio de Janeiro in 1992. Despite its prominence, it has been argued that the United Nations Conference on Environment and Development, the Earth Summit which was held in Rio de Janeiro two decades after Stockholm, failed to resolve the tensions between the North and South.

> None of the treaties and agreements signed in Rio tackles any of the major causes of environmental problems, such as the pressure placed on the planet by Northern consumption or unsustainable patterns of development in the South. The problems of free trade, militarisation, and mega-polluters like some multinational companies have been dropped completely.
>
> (Chatterjee and Finger, 1994, 61)

The concept of sustainable development has been adopted globally, but concerns exist that the diaphanous quality of the concept, makes it particularly attractive to technocratic interventions, portrayed as sustainable. Escobar (1996) provides a powerful argument to illustrate the way in which the concept can be linked to the modernist development discourse which has resulted in the modification of development practices, with little recourse to profound adjustments to the market system. In Table 1.1., I have outlined the main catalysts behind the popularisation of sustainable development, which have been largely mainstream in its promotion of

> a vision of sustainable development strongly influenced by science, by wildlife conservation, by concerns for multilateral global economic relations, and by an emphasis on rational management of resources to maximise human welfare.
>
> (Adams, 1995b, 360)

| THE ENVIRONMENT-DEVELOPMENT NEXUS | | | |
|---|---|---|---|
| YEAR | MAIN DEVELOPMENT | MAIN OUTCOMES | CRITIQUE |
| 1972 | The United Nations Conference on the Human Environment, Stockholm | United Nations Environment Programme (UNEP), Kenya | UNEP lacks funding; promotes 'rational' planning |
| 1980 | *World Conservation Strategy* (WCS), International Union for the conservation of Nature (IUCN) | Sustainable development promoted in the form of sustainable resource utilisation | Reflects Neo-Malthusian concerns, 're-packaged' conservation |
| 1987 | *Our Common Future*, World Commission on Environment and Development (WCED): Brundtland Report | Environment and development merging, increased consideration of international structures | Exhibits economic growth bias and maintenance of the world economy |
| 1991 | *Caring for the Earth*, IUCN | Social and economic concerns built into the ecological-oriented WCS | Builds on the postulates of the WCS and Brundtland Report |
| 1992 | United Nations Conference on Environment and Development (UNCED): Earth Summit | A series of agreements on a range of issues (biodiversity, desertification); *Agenda 21*; Sustainability Indicators | No new agenda for development or an alternative international economic order |

Table 1.1.: Increasing the links between environment and development (Sources: Mitlin, 1992; Chatterjee and Finger, 1994; Adams, 1995a; Adams, 1995b; Barrow, 1995; Redclift and Sage, 1995; Cook, 1998)

Though the concept of sustainable development is riddled with ambiguities and contradictions (Redclift, 1992), one needs to question whether it is possible to transform it from the "metafix" which "will unite everybody from the profit-minded industrialist and risk-minimising subsistence farmer to the equity-seeking social worker, the pollution-concerned or wildlife-loving First Worlder" to addressing "deeper socio-political changes (such as land reform) or changes in cultural values (such as overconsumption in the North)" (Lélé, 1991, 613). This inability of mainstream conceptions of sustainable development to adopt a political

economy approach ensures that much of what passes for sustainable development boils down to environmental managerialism. What then, is the place of sustainable development in responding to Third World environment-development concerns? If sustainable development currently exhibits an ethnocentric, North-biased view of the environment-development question, how do we apply this concept to respect "the integrity of other cultures, and their views of sustainability" (Redclift, 1991, 39) and to ensure that it does not detract "from the quest of the majority of the world's population to earn an adequate livelihood, have economic security, and live in dignity (Buttel, 1992, 24).

The approach adopted in this research, i.e. sustainable livelihoods thinking, as put forward by Chambers (1988, 1991), should be located within the structural underpinnings that define and constrain the decisionmaking processes of the poor. Sustainable livelihoods requires that the rights of poor people are secured, and that their ownership of, and access to, resources and income-earning activities, including reserves and assets to offset risks, is increased (Chambers, 1988). Though 'livelihoods thinking' has advanced our understanding of sustainable development, one is still presented with the dilemma of pursuing sustainable livelihoods at the local level, within the context of marginalisation by international development processes (Redclift, 1992). I concur with Redclift in his call for putting political economy 'first', in order to understand the "real-world thinking and priorities of the poor" (Redclift, 1992, 36). However,

> In order to move beyond the totalising tendencies of grand structural theories, we need to develop middle-range explanatory frameworks that integrate global processes with local environmental action and reveal the particular outcomes experienced by people and communities living within localities and regions.
>
> (Friedmann and Rangan, 1993, 11)

Thus the moral and practical imperatives for making sustainable livelihood security the focus for analysis in my thesis is tied in with an understanding of the structure of the South African agri-food system in order to propose and evaluate future interventions in land redistribution and agricultural reform (Chambers, 1988; de Klerk, 1991). The nature of land reform opportunities in the Western Cape, the location of the Warmwater Farming Trust case study, has been configured by an interplay between politics and economics resulting in the creation of a complex agrarian economy. This research focuses on the importance of local-level action to

monitor social change, specifically the changes effected by the land reform programme on the agricultural livelihoods of the Warmwater farmers. In view of the impact of apartheid structures in shaping the South African landscape, and the Western Cape in particular, the approach adopted in this research builds on the point made by Redclift and Sage (1995) which suggests that the search for sustainable rural livelihoods should be understood within the structure-agency dialectic. The interactions between the agency of local people and the structures, such as apartheid-era institutions and policies, are important in understanding social and environmental change.

Though it has an important role in integrating environment and development, and is a useful tool for building consensus, sustainable development generally ignores deeper socio-political changes, such as land reform. It is therefore important to reject the economic growth focus, noted in the Brundtland Report and to include a political economy analysis (Lélé, 1991). A qualified sustainable development which explores economic, political and social considerations, within political economy and post-structural frameworks, which considers the dialectic of agency and structure, the relationship between power and knowledge and the discursive formations around sustainable development, is required (Adams, 1995b; Redclift, 1991; Mitlin, 1992; Escobar, 1996). Johnston (1996) has said that sustainable relationships are unlikely to evolve in the current political economy. Therefore, the main question which needs to be asked is whether environmental equilibrium can be achieved through the dominant development paradigm, that of capitalism. The failure of environmental politics, particularly in Europe, and the transformation of capitalism through initiatives such as green consumerism, have failed to grapple with the underlying problems of the capitalist dynamic (Sklair, 1994; Johnston, 1996). One of the biggest obstacles to achieving 'sustainable development' is the notion of power, which has been addressed by both Redclift (1992) and Adams (1995a) in their theses on sustainable development. To quote Johnston

> ...the creation of environmental problems is a necessary outcome of the dominant mode of production, and their resolution is difficult because the only institutions which might be mobilised to promote sustainable development exist to promote the interests of those who benefit most from the status quo.
>
> (Johnston, 1996, 255)

The dilemma presented by the term sustainable development is its association with

the modernist development discourse which focuses on progress (reason and freedom), and finds its basis for legitimation and criticism in science (Redclift, 1993). Thus, sustainability (rooted in science), is co-opted into development (progress), and is in many instances a renewal of modernism, located within the cultural context of the North (Redclift, 1993). Emulating the diversity of sustainable development definitions, criticisms of conventional agricultural methods have not been uniform, ranging from those mildly critical of conventional agriculture to those which view conventional agriculture as an inherently unsustainable and unproductive activity, requiring fundamental societal restructuring (Rosset and Altieri, 1997). Gibbon *et al.* (1995), in examining the history of the sustainability debate, have found that agriculture has often been sidelined by the production of agricultural surpluses, which give the impression that globally agriculture is in a 'healthy' state. In addition, policy prescriptions for sustainable agriculture reflect the inconsistencies and inadequacies of the notion of 'sustainability' (Lélé, 1991). Nevertheless, empirically sound criticisms have increasingly been levelled at conventional agriculture from a variety of actors, such as environmentalists, political activists and international research organisations. Thus, a qualified sustainability could still provide a powerful unifying concept for development practitioners.

Internationally, and within South Africa, the debate on environment and development has been well documented. Following the tremendous changes which preceded the elections in 1994, numerous authors have discussed the role of sustainable development in South Africa (Cock and Koch, 1991; Ramphele and McDowell, 1991; Environmental Monitoring Group, 1992; Hallowes, 1993). These writings reflect the tensions between mainstream 'environmental managerialism', for example the implementation of Integrated Environmental Assessments (For a critique, see Ngobese and Cock, 1997) and more radical approaches (Cock and Koch, 1991; Hallowes, 1993), calling for the complete transformation of the political economy of the apartheid state. Hence, the continuum between technocentric and ecocentric or shallow to deep green approaches, is reflected in the South African environmental movement as well. O'Riordan (1981), in describing the evolution of modern environmentalism, has traced the origins and manifestations of ecocentric and technocentric approaches to the environment, which ranges from being wildlife-oriented and preservationist to the initiation of mass-based political action around environmental concerns. While the

environmental movements in the North and South display distinctive characteristics, the central concern of many environmental movements in the South has been sustainable livelihoods (Ghai and Vivian, 1995a; Redclift and Sage, 1995; Guha and Martinez-Alier, 1997). The work of the Environmental Justice Networking Forum (EJNF) in South Africa on issues of poverty, occupational and environmental health, as well as the increased focus on participation in environmental policy formulation, reflects the growth of a mass-based environmental movement, responding to the needs of all South Africans (Environmental Justice Networking Forum, 1998a). In order to redress the impact of the South African environmental movement, particularly its role in creating a negative perception of the 'environment' in black people by conceptualising a land vs. conservation dictum, a mass-based environmental movement needs to be created (Khan, 1990a; Khan, 1990b). Such an environmental movement, which ensures that the "issues identified as relevant by local communities" (Khan, 1990a, 37) are prioritised, is already in the making.

> There is an emerging 'new environmentalism' in South Africa which addresses the political and social dimensions of protecting the environment, and links these analyses to sustainable development through such issues as land use, urbanisation, workplace safety, employment, food policy, education and democracy. Trade unions and environmental organisations have begun to work together.
>
> (Cole, 1994, 235)

The principles which underscore this research into participatory monitoring of land reform geared towards sustainable agriculture, include adopting a political economy framework to address the historical configuration of the agrarian economies in South Africa. While maintaining a critical perspective of sustainable development, the role of structures, such as policies and institutions, in effecting a change in the everyday lives of land reform beneficiaries and in healing the land, will be investigated. The focus on the locale, the Warmwater Farming Trust, enables that the sustainable livelihood ideals of local empowerment, capacity building and participation, are investigated. It also represents a focus on the intangibles of development, such as freedom, peace, justice and dignity, concepts absent from the social relations on many South African farms during the apartheid-era. In the South, sustainable livelihoods often form the core around which environmental action is initiated (Friedmann and Rangan, 1993). Thus, the role of sustainable agriculture-based considerations in linking the environmental and social justice movements in South Africa, will also be evaluated. The field research conducted with the Warmwater Farming Trust basically represents a quest for sustainable livelihoods in

which the power variable is not sacrificed in the pursuit of economic growth, where livelihoods move beyond economic variables of well-being to a holistic formulation of the society-nature dialectic.

The field of human-environment relations, one of the four traditions of academic geography which includes the spatial tradition, area studies and earth studies (Kates, 1987), forms the disciplinary background to my thesis. In response to the resurgence of the environmental question, human-environment relations is well placed to respond to the challenges of our times, such as sustainable development, conservation and development and sustainable agriculture (Zimmerer, 1994). The failure of geographers, with exceptions, to respond to environmentalism in the 1960s and 1970s, should not be replicated. As Section 1.2. will point out, developments in human-environment relations, such as the ecological critique of modernism, echoes many of the principles of the sustainable livelihoods approach adopted in this research. Human-environment relations constitutes fertile ground for providing both theoretical and practical insights for the South African land and agrarian questions posed in my thesis.

## 1.2. HUMAN-ENVIRONMENT RELATIONS 'UNEARTHED'

> Land and life is what geography has always been about. It is time we got out again into the great wide world, met its challenges...
>
> (Stoddart, 1987, 334)

The focus on human-environment relations characterises not only the works of early geographers (pre-modern), but is also reflected in the historiographies of geographers, cum-explorers, working towards the realisation of colonial and imperialist projects (Livingstone, 1992). During the late-nineteenth century, geographers writing on the human environment adopted environmental determinist approaches which sought to demonstrate the impact of environmental factors on human behaviour and organisation. To quote Binns

> A strong patriotic, somewhat superior and, at times, even racist, attitude pervaded many geographers' and others' writings about distant lands and peoples in the late-nineteenth/early-twentieth centuries. Writers often gave the impression that simple, heathen peoples who were living in harsh environments, plagued by climate and disease, were waiting to be 'developed' by white colonialists.
>
> (Binns, 1995, 313)

Thus, geographer's concerns with the human-environment interface, particularly in developing the above-mentioned construction of the development process, did not endear the notion of 'environment' to the social sciences. It was only through the works of geographers such as Hartshorne (regional geography), Sauer (historical geography), White (natural resource management) and Glacken (conceptions of nature) that man-environment studies (as it was then known), was taken forward in the mid-twentieth century (Cloke *et al.*, 1991). This can be seen in the historic symposium entitled, 'Man's role in changing the face of the earth' (Johnston, 1991). The post-war period of scientific euphoria also saw human geographers respond in the search for universal spatial laws which govern the way in which the world works. It presented an opportunity for geography to restake its intellectual claim, and led to the uncritical adoption by both human and physical geographers, of the assumptions and methods of the spatial-scientific revolution. This was the state of affairs for a long period of time, even within human geography where fields of inquiry as diverse as development and behavioural geography developed grand meta-theories from empirical observations. The emergence of humanist and radical geographies, such as Marxist or structuralists approaches, provided valid criticisms of this post-war positivist geography. Geographers engaged in human-environment research began to move away from the technocentric approach in understanding 'humanity's role in changing the face of the earth' to exploring the human experience and underlying structural underpinnings which constrain human action.

While humanist approaches, particularly within behavioural geography, focused on interpreting peoples' everyday lives, structuralist approaches, while critical of humanists' uni-scalar focus on the locale, adopted Marxist or structure-based analyses to uncover the structural underpinnings which define and constrain decisionmaking processes. The subsequent confluence of human agency and structural explanations gave rise to seminal works in the 1980s, such as Watts' research on the political economy of famine in Africa (Watts, 1983) and Blaikie and Brookfield's (1991a) analysis of land degradation which employed a behavioural and political economy analysis. The challenges of the 'new environmentalism' of the last two decades and the profound changes to the international geopolitical arena with the collapse of the former Soviet Union, present a 'road still beckoning' for human-environment relations researchers (Kates, 1987). Informed by changes within social theory, a post-paradigmatic human geography has emerged (Pickles

and Watts, 1992). The myriad of these theoretical movements impact directly on the study of the environment of places like Warmwater.

The resurgence of interest in the environment at a variety of scales has 'unearthed' human-environment relations, one of the classical research areas of geography. While some of the focal points which require study include global environmental change, climate change and deforestation, conceptual and epistemological concerns, such as environmental philosophy and the relationship between power and knowledge have entered the fray of 'green' geography (Simmons, 1990; Bordessa, 1993; Simmons, 1995;). However, the environmental resurgence is not just the result of academic reinvigoration. It is located in a number of processes, which include popular rediscovery by the media (particularly related to global environmental concerns); the greening of history; critical ideologies (such as political ecology); gender (eco-feminism), the confluence of nature and race in the environmental justice movement; and the need for political activism to incorporate pragmatism (Cutter, 1994). The theoretical foundations of this new 'green rage' are built on radical environmental ideologies, such as deep ecology, eco-feminism, political economy and political ecology. What then are the principles of a post-paradigmatic geography?

Pickles and Watts (1992) have stated a post-paradigmatic geography as being open to ideas within and across disciplines, adopting a critical understanding of disciplinary developments, and incorporating the causal role of structures and an adequate theory of human agency. Within South African geography, calls for reclaiming the missing core of human-environment relations in understanding contemporary problems, have also been made (Vogel, 1992; Archer and Dodson, 1997). Vogel (1992) has stated that geographers are well-placed to address South Africa's environmental challenges, which incorporate both First and Third world issues, green and brown agendas and a growing environmental justice movement. Archer and Dodson (1997), in constructing a claim for a fresh approach to human-environment relations in South Africa, emphasise the need to move beyond the confines of existing paradigms by incorporating a post-modern approach in which human and physical systems are meaningfully integrated, various bodies of theory are drawn upon to provide explanations, geographical scales are linked and discourse analysis is employed. Such an approach can be observed in political ecology which "sees environmental problems as arising out of the actions of human

agents within particular sets of social, political and/or cultural relations operating across a range of scales" (Archer and Dodson, 1997, 154). What implications do these developments in the field of human-environment relations hold for understanding the configuration of land and agrarian reform in South Africa? Two geographers provide important insights on the South African scenario below.

> South African geographers are well placed to expand their contributions, especially by adopting stronger interactive research ventures. Results of such research will be of great significance to the broader scientific population, and equally important to local communities that daily confront environmental problems. An integrated geography embracing a human-environment approach beckons local geographers to this goal.
>
> (Vogel, 1992, 181-2)

> The distinctive history of South Africa also requires careful attention to the issue of restitution of land and residential property from which people were evicted under apartheid...
>
> (Smith, 1995, 4)

It is clear, from glancing at these quotes that the transformation of the South African landscape requires a commitment to social justice (Smith, 1995), and that technocentric, managerialist approaches to human-environment relations will fail to effect this change. Despite the difficulties associated with integrated environmental research in South Africa (Quinlan, 1997), the spatial and societal inequalities of the South African landscape requires that the transformative ideals, linked to sustainable development, espoused in the constitution and the Bill of Rights, is articulated around the need for deeper social change (Republic of South Africa, 1996; Binns, 1998).

The approach adopted here draws on a range of provisos put forward on the nature of the relationship between people and environment. The ecological critique of modernism, which is more complex than a simple switch to post-modernism, is one of the premises of my approach. Gandy (1996) says that post-modernism's ecological critique overemphasises plurality, without evaluating the merits of different positions, while the agency of nature is not given due consideration either. However, it is possible to articulate an ecological critique of modernism "without abandoning either rational scientific discourse or a coherent analysis of structural determinants of environmental degradation such as the commodification of nature" (Gandy, 1996, 30). Thus, the political ecology analysis adopted in this research, without discarding the value of the post-modern discourse, adopts an approach

more akin to critical realism which

> ...may lead to more appropriate ways of handling biophysical systems without denying their independent existence or forcing natural and social systems under the same scientistic framework advocated under positivist epistemologies.
>
> (Gandy, 1996, 34)

A second concern lies with incorporating historical (time), scale, subjectivity (reflexivity), and structure-agency (global-local) considerations (Zimmerer, 1994). This includes the recognition of the need to move from the rigidity of the Marxist critique to recognising that those 'below' are not homogeneous groups - what Lipietz (1996) calls critical geography. My third concern lies in incorporating Whatmore's (1993) call for research into the rural realm. This is borne out by the neglect of rural and agricultural geography in South Africa, echoing international developments (Mather, 1992). These considerations: the ecological critique of modernism and development, the structure-agency debate, and the overall focus on environmental and social justice in the rural realm, can be achieved by adopting a political ecology analysis which "attempts to address the shifting dialectic between society and rural environments" (Whatmore, 1993, 540). Political ecology draws on a range of theoretical insights to provide a power(ful) conception of human-environment interactions which is well-suited to the question at hand: the interplay between land reform, sustainable agriculture, and local-level action on Warmwater.

## 1.3. A POLITICAL ECOLOGY FRAMEWORK OF ANALYSIS

Political ecology has emerged from three broad traditions in human-environment relations: human ecology, cultural ecology (local) and political economy (structural analysis, particularly Marxist critiques), thus bringing together natural and social sciences (Pickles and Watts, 1992; Zimmerer, 1994; Blaikie, 1995a). One of the most important contributions of this approach is the convergence of cultural ecology, studying noncapitalist rural societies' adaptations to the environment, and political economy which builds on Marxist traditions of questioning spatial and societal inequality (Pickles and Watts, 1992). Political ecology offers a suite of theoretical propositions which draws from a range of trajectories, for example deep ecology, eco-feminism, eco-philosophy and eco-socialism (Atkinson, 1991). Analogous to the resurgence within human-environment relations, political ecology

arose within the context of the increased awareness of human pressure on nature, the growth of environmentalism and the emerging global environmental discourse, such as UNCED (Blaikie, 1995a). Within human-environment relations, political ecology emerged most prominently in the land degradation work of Blaikie and Brookfield, first published in 1987. Their analysis of land degradation focused on the interactions between human agency and structures (the state, policies), on a variety of scales (person, household, village, region), and over a period of time. This work established the relevance of a political ecology analytical framework in the field of human-environment relations, exemplified in the chain of explanation which explored the processes that link the various actors, from land managers to the state and world economy. Thus, their approach of 'regional political ecology' combined

> the concerns of ecology and a broadly defined political economy. Together this encompasses the constantly shifting dialectic between society and land-based resources, and also within classes and groups within society itself.
> (Blaikie and Brookfield, 1991a, 17)

Bryant (1992), in looking at the emerging research agenda of political ecologists identifies the relevance of this framework for developing a Third World-focused political ecology in which environmental and political analysis are integrated to understand Third World environments. Prior to addressing some of the critiques of political ecology, I will first examine some of the its underlying principles and elements. In his book, *The Principles of Political Ecology*, Atkinson asserts that political ecology is concerned with effecting changes in the political and social machinery that structure people's everyday lives, accepting culture and society as central terms and revealing the nature of societal constraints. One of the key questions asked is whether the "choices currently being made by our society [will] satisfy our material and spiritual needs and avoid ecological destruction?" (Atkinson, 1991, 171). Hence, at its core, political ecology is concerned with the decentralisation of social and political structures, the undoing of inegalitarian and commensurable social relations, overcoming the multiple dimensions of individualism that dominate enlightenment thinking, and asserting a holistic mode of thought and action (Atkinson, 1991).

> The dialectic upon which political ecology focuses is concerned with the materialisation and increasingly intractable environmental problems arising out of the existing relationship between our consciousness - European culture - and nature, between our inherited attitudes and practice on one hand and the progressive destruction of nature on the other.
>
> (Atkinson, 1991, 214)

Blaikie (1995a) pronounces the central elements of political ecology as the use of a range of epistemologies and parent disciplines; addressing the tensions between the social and natural sciences; prioritising historical analyses and locally specific ecologies; employing different levels and scales of analysis which are linked by credible explanations; acknowledging plural perceptions on the environment and incorporating a critical analysis of international policy and the role of the state (Blaikie, 1995a). The role of a political ecology which provides an ecological critique of modernism, within a broadly defined structure-agency framework, has been extolled for its relevance in addressing Third World environmental problems and for overcoming the present impasse in Third World environmental research, brought about by the inability of researchers to address the 'power' variable (Bryant, 1992, 1997).

A reformist research agenda which is ineffective in its incorporation of "power relations as a central factor in the development of the Third World's environmental problems", has provided an inadequate explanation of the nature of, and dynamics behind, Third World environmental problems (Bryant, 1997, 6). By focusing on selected social concerns without recourse to understanding their causes (e.g. poverty and population growth), researchers have failed to deal with the contradictions of sustainable development under capitalism (Redclift, 1992; Johnston, 1996; Bryant, 1997). In developing the case for a Third World political ecology, Bryant contends that 'sustainable livelihoods' appear to be the logical outcome of political ecology, while he rejects sustainable development on the basis of its apolitical nature, premised on perpetuating existing political and economic systems (Bryant, 1997). Thus, a sustainable livelihoods approach involves conceptualising unequal power relations, examining their spatial manifestation, and looking at the 'weapons of the weak' - why do they resist at all? It therefore asserts that alternative solutions, based on the transformation of the status quo, must be sought. Themes in Third World political ecology includes exposing the ways in which powerful actors benefit from environmental degradation (See Blaikie, 1995b), and exploring the role of grassroots action in sustainable livelihood creation (Bryant, 1997).

> Third World political ecology thus analyses the impact of political and economic forces on Third World peoples and environments in keeping with a radical perspective that accords priority to questions of social justice and equity.
>
> (Bryant, 1997, 10)

Political ecology thinking therefore echoes developments in human-environment relations, such as the challenges of post-modernism in understanding the modern project of global environmental change, privileging different knowledges; and questioning the privileged status of science (Blaikie, 1996). It challenges the dominance of the modernist development discourse by employing discourse analysis. Discourse is "an area of language of use expressing a particular standpoint and related to a certain set of institutions" (Peet and Watts, 1996a, 14), and is useful in showing the ways in which the physical impacts of the environment are interpreted, experienced and expressed by people. Thus, discourses on the environment enters the local and global level and usually involves various actors (Blaikie, 1995a). Complementing discourse analysis, there is a need to engage with the natural sciences, such as ecology, to ensure that a description of the 'human metabolism with nature' is adequate (Hayward, 1994, 116). This is important to ensure that the agency of nature is weighted accordingly.

Finally, political ecologists need to counter apolitical neo-liberal approaches to the environment which focus on the establishment of properly functioning markets; policies that require limited state intervention and the promotion of interventions whose environmental benefits can be satisfactorily justified, for example soil conservation (Biot *et al.*, 1995). The neo-liberal approach includes a focus on environmental economics, population growth (neo-Malthusian), incentives and institutions, poverty and environmental degradation, and 'participation'. For example, it would assert that the poverty-environmental degradation links can be broken by establishing appropriate institutional frameworks for the operation of market forces, together with safety nets, and limited public action; while participation can range from providing information through various levels of consultation in which citizen empowerment is most often forfeited (Biot *et al.*, 1995). Such reformist and managerialist approaches to the environment needs to be countered by political ecology by incorporating

> ...a broader conception of the forms of contention (from class struggle to social movements to everyday resistance) and a deeper conception of what is contended (from ownership of productive resources to control over the human imagination). ...The intention is not simply to add politics to political ecology, but to raise the emancipatory potential of environmental ideas and to engage directly with the larger landscape of debates over modernity, its institutions, and its knowledges.
>
> (Peet and Watts, 1996a, 37)

The political ecology "which offered a powerful Marxist-influenced analysis of resource use and environmental conservation during the 1970s and early 1980s" (Peet and Watts, 1996a, 2), now has to respond to a 'reformed' capitalism, the environmental effects of the rapidly growing new industrialising areas (Asian Tigers) and a recognition of the global environmental discourse (e.g. global warming and ozone depletion). Political ecologists have made important contributions, particularly on understanding the poverty-environmental degradation dialectic. Notwithstanding these, Peet and Watts (1996a) have criticised the explanatory power of political ecology for failing to fully incorporate politics; and its bias towards poverty, the rural, the Third World and the agrarian. Though other stories, dealing with air pollution, worker health, and the restructuring of capitalism are required, political ecology responds well to the questions facing my research. Poverty, rurality and agriculture, are issues high on the agenda of the farmers of Warmwater.

New directions in political ecology which include re-theorising political economy and the environment (linking Marxism and ecology), emphasising politics (eco-politics), understanding the role of environmental movements, adopting discursive and historical analyses of the environment, and re-thinking ecology, also present important analytical tools for understanding human-environment relations (Zimmerer, 1994; Peet and Watts, 1996a). Though, the approach adopted in this research has not utilised discourse theory as a central approach, I concur with many of Peet and Watts' (1996a) predications that post-structural concerns with knowledge, power and cultural differences, and a critique of development and modernity is imperative to unleash the 'potential emancipatory power' of what they call 'liberation ecologies'. Liberation ecology adopts critical approaches to political economy, for example post-structural criticism of Western rationality and modernity; it joins critiques of the West with a critical appreciation for alternative rationalities (without reifying tradition!); and it employs discourse theory to understand the complex articulations and hybrid sorts of development in the

the grounds of both social justice and environmental concerns. In focusing on South Africa, it is important to understand the history of agriculture and its relation to the changes in rural environments, especially with respect to forced removals and the usurpation of land rights. Moreover, the dearth of land reform opportunities in the Western Cape is strongly related to the historical antecedents of the colonial and apartheid-eras. Thus a political ecology approach, analysing the effect of the tools of apartheid (policies, practices) on land and life, will be undertaken to understand the main land and agrarian questions, as well as contemporary challenges. Within the current focus on land reform, an opportunity to implement a transformed agrarian system, exists. By focusing on the initiation of a participatory monitoring process for sustainable agriculture, one can establish how communities prioritise and track environmental and social change and determine whether they would be amenable to the introduction of more sustainable land use options. In addition to such local-level action, the role of government departments, NGOs and community-based organisations, active in the land and agrarian sphere, is equally important in effecting a change in the type of policies, research and support services which are conceived.

The specific objectives of this research are to evaluate the literature on sustainable agriculture internationally and within South Africa; and to briefly examine the history of agriculture in South Africa and the implications for integrating agricultural sustainability issues into land reform. The essential hypothesis of this research, however, is to determine whether an indicator-based participatory monitoring system could contribute towards the development of more sustainable production systems, within the context of land reform in South Africa. This would incorporate more than biophysical sustainability, and will focus on monitoring the transformative effect of the land reform programme on the lives of programme beneficiaries. The approach and methods adopted in this research will be based on a variety of methodologies employed in the human-environment relations field. A literature survey will examine the main land and agrarian questions in South Africa; interviews with decisionmakers and key informants in government and civil society will be carried out; and participatory research methodologies, including participatory rural appraisal (PRA) and farming systems research, will be adopted. This will focus firstly, on introducing the concept of agricultural sustainability to the research participants, in this case land reform beneficiaries, cum-farmers. Secondly, the farmers have developed indicators which could act as a tool to monitor the

transformative effect of land reform, in terms of social and environmental justice issues, framed as sustainable agriculture. It is intended that findings of this research should feed into the process of formulating policy on sustainable land use and present agricultural research and extension institutions, as well as NGOs, with a tool for assessing the sustainability of agriculture. In addition, a third outcome is the development of the foundation for linkages between land activists, and environmental and social justice proponents. This research therefore aims to be applicable to current and future South African and global agricultural land use systems in which inappropriate, capital-intensive agriculture has resulted in the exploitation of nature, degrading the resources upon which the entire community of life depends.

The political ecology framework of analysis employs a critique of modernity, for example of neo-liberal policies and practices. It also draws on political economy insights through its discussion of the impacts of apartheid and colonial policies on the agrarian economy. Secondly, it focuses on the local level to initiate action geared towards social and agricultural transformation, thus unleashing the emancipatory potential of political ecology. Furthermore, the connections between the local level, land reform policies and development discourse will be made to illustrate the way in which the nature of the human-environmental relationship is underscored by political and economic processes, such as land reform policies and the liberalisation of agricultural markets. On a more theoretical note, this dissertation seeks to show how geographers, employing political ecology approaches, can address South Africa's environmental challenges. These include the provision of basic needs, such as food security and housing, as well as an increased understanding of land dispossession - a key challenge facing the post-apartheid government in healing the South African landscape.

Finally, my thesis attempts to re-dress the lack of focus on rural environmental issues, particularly related to commercial agriculture, which enjoyed extensive government protection during both the colonial and apartheid eras. The rise of the environmental justice movement in South Africa and the 'new environmentalism' is still largely urban-biased and focused on issues of worker health and safety in the mining industry, climate change, conservation and development, and poverty and environmental degradation. Questions on the plight of the landless, alternative agricultural land use practices, and the impact of commercial agriculture on nature

and particularly on human health, still remain unanswered. This research therefore represents a shift in thinking from technocratic managerial interventions to the formulation of socially just interventions into the environmental realm. By failing to incorporate and prioritise the search for just solutions to the society-nature interface in agriculture, land reform in South Africa risks building on apartheid's environmental toll.

## 1.5. STRUCTURE OF THE THESIS

The remaining portion of this thesis is divided into seven chapters, three which outline key contextual issues that underscore my approach to the land and agrarian questions presented by the experience of the Warmwater farmers. The following four chapters deal directly with the question at hand, that of initiating a participatory monitoring process for sustainable agriculture in a land reform context. Method appendices and a reference list can be found at the end of the thesis.

The land reform programme in South Africa, particularly the historical antecedents which characterises current land distribution patterns are described in Chapter Two. The chapter also seeks to delineate the impact of the apartheid agrarian economy on society and nature by drawing on research conducted into the impact of apartheid on the environment. The goals of the land reform programme, pertaining to both social transformation and sustainable agriculture, encapsulated in land policy documents, is juxtaposed with the increasing criticisms levelled at the programme. Critiques of philosophical, technical and policy aspects of the land reform programme are evaluated in formulating solutions which would make land reform work. In particular, the convergence between the land reform and sustainable agriculture debates, observed internationally and within South Africa, prefigure an argument for sustainable agriculture, local-level action, and participatory monitoring in the land reform programme. The case for sustainable agriculture, participatory monitoring and local action, is presented in Chapters Three and Four.

Chapter Three seeks to elucidate the 'greening' of agriculture by firstly describing the agriculture-society interactions which characterise conventional agriculture,

and then exploring the argument for a more sustainable agriculture. The history, philosophy, and characteristics of sustainable agricultural initiatives are then illustrated, particularly in relation to developments in South Africa. The principles of sustainable farming systems, which move beyond biophysical considerations, are then put forward. Pivotal to such an approach is local-level action around social and environmental justice, changed ethics and land use practices, and alternative 'development' imaginaries. Sustainable agriculture therefore moves beyond input-substitution approaches to incorporate changed values and beliefs, grounded in local-level mobilisation.

Participatory research methods, drawn from agro-ecosystem analysis, rural development research, and the sustainable development discourse are described in Chapter Four. The South African rural context warrants the utilisation of such research methods to unlock the silenced voices of the rural poor, and to transform researchers from 'outsiders' to active participants in social change processes. The need to utilise a range of methodological tools that complement one another and respond to the challenges of re-dressing the apartheid legacy of top-down planning and decisionmaking, is a key element of the political ecology approach adopted in my thesis. A range of tools, aimed at maximising farmer participation in this research, has been judiciously drawn from participatory rural appraisal, farming systems research and extension and sustainability indicators. As a tool for initiating change, the pragmatic, process-oriented and change-driven participatory monitoring process, is developed in this chapter. The participatory monitoring process, a tool geared towards unleashing the emancipatory potential of political ecology, has been developed in conjunction with a political economy analysis of land and agrarian reform in South Africa, described in Chapter Two.

Chapter Five describes the context of the research area of the Western Cape Province. The scope for implementing the land reform programme in a province, unique in its agrarian history, is then assessed. The Western Province, is the oldest site of conventional (white) agriculture, which relied heavily on wage labour, in the form of slave and/or indigenous populations. Many of the social structures governing the relationship between (white) farm owners and farm workers, which characterised the colonial period, remained active in the apartheid-era. A number of contributory factors compound the enormous challenges faced by the land reform programme in the Western Cape, such as the economic importance of white

commercial agriculture in the province, the lack of a black smallholder class, and the fact that the National Party, largely responsible for formulating apartheid policies since its inception in 1948, won its only provincial legislature in this province in 1994. This chapter therefore seeks to describe the context of the Warmwater Farming Trust, a land reform project in the Montagu district of the Western Cape.

In Chapter Six, the land reform case study, the Warmwater Farming Trust, a commercial deciduous fruit farm, is described. My contact with the farmers, as well as the main concerns of the farmers are outlined. Thereafter the findings of the research process, evaluated in Chapter Seven, involving a range of participatory research methods, is set out. This includes a timeline drawn up by the farmers, problem identification and analysis exercises, and the identification of indicators on a range of components, believed by the farmers to conceptualise an agriculture which is environmentally and socially sound. A possible route for implementing a participatory monitoring process on the farm is also outlined.

Chapter Seven explores the value of the indicator-based participatory monitoring process in fortifying the nature-agriculture-society linkages on the farm. In particular, it provides an analysis of the usefulness and relevance of the indicators for the farmers, particularly in the context of commercial agricultural production and the quest for transformed agrarian relations, enshrined in the land policy of South Africa. The potential for a sustainable agriculture-based land reform programme is examined in the context of the particular tenurial arrangement on the farm, a partnership between a private agricultural development company and a group of former farm workers. In addition, a case for promoting sustainable agriculture and infusing sustainable agriculture considerations into the environmental justice movement, will also be made. The chapter concludes by correlating the lessons learnt from the research on participatory monitoring for the implementation of the land reform programme in South Africa.

Chapter Eight, the concluding chapter, aims to provide the links between the field research and the constraints facing the land and agrarian questions, to provide an explanation for the current impasse in the implementation of the land reform programme. It also endeavours to highlight the need to increase the links between social and environmental justice, particularly on land and agrarian issues, which

need to move beyond the realm of rights to incorporate land use planning for sustainable livelihoods within the land reform programme. Finally, it advances the political ecology framework of analysis in understanding society-nature interactions in the highly politicised context of South African society.

# - CHAPTER TWO -

# LAND REFORM IN SOUTH AFRICA: RECONSTRUCTING LAND AND AGRARIAN RELATIONS

> ...despite the fact that agricultural strategy in this country has achieved its two main objectives - self-sufficiency in food production and acceptable incomes for white farmers - it has done so by distorting the policy environment, causing society to pay considerable financial, social and environmental costs.
>
> (Lebert, 1994, 32-33)

The land issue presents one of the biggest challenges to the post-apartheid Government. Gross maldistribution of land and water resources, environmental degradation and poor land use practices exist in many rural areas. This chapter will examine the need for land reform in the rural areas of South Africa, concentrating particularly on the scope of current land reform mechanisms to redress the injustices of colonial and apartheid-based agrarian systems. Land reform can be seen as "the redistribution of property or rights in land for the benefit of the landless, tenants and farm labourers" (Adams, 1995, 1). Land reform is a central pillar of the post-apartheid government's agenda and plays an important role in alleviating poverty. It has been contended by many researchers that an improvement in tenure security, achieved through land reform, could also have a positive impact on agricultural production (von Benda Beckmann, 1991; Dudley *et al.*, 1992). Land reform could therefore be a powerful instrument in alleviating rural poverty (Meliczek, 1995).

Worldwide, three key debates have informed the shape of land reform programmes. These include the level of state intervention, non-market vs. market-based reform measures and the specific approach adopted to implement land reform (Adams, 1995). The South African government has proposed a three-pronged approach to land reform which includes restitution of land to individuals, communities or groups who were historically dispossessed; increasing access to land and housing; and ensuring tenure security (DLA, 1997a). The vision of the Department of Land Affairs (DLA), is that a land reform programme would "contribute to reconciliation, stability, growth and development in an equitable and sustainable way" (DLA, 1997a, 7). The *White Paper* released in 1997 outlines the issues which need to be

dealt with, which include redressing the historical injustices of the past, reducing poverty and distributing land equitably within a system of land management which will support sustainable land use patterns. The land reform programme consists of three elements:

> **Redistribution** aims to provide the disadvantaged and the poor with access to land for residential and productive purposes. Its scope includes the urban and rural very poor, labour tenants, farm workers as well as new entrants to agriculture.
> **Land Restitution** covers cases of forced removals which took place after 1913. They are being dealt with by a Land Claims Court and Commission, established under the *Restitution of Land Rights Act, 22 of 1994.*
> **Land tenure** reform is being addressed through a review of present land policy, administration and legislation to improve the tenure security of all South Africans and to accommodate diverse forms of land tenure, including types of communal tenure.
>
> (DLA, 1997a, 9)

In addition to providing an enabling policy environment, the government also provides direct financial and other support services. One of the key financial instruments has been the Settlement/Land Acquisition Grant (currently set at R 15 000 per household), which is used for a range of activities including land acquisition, related on-farm capital items, enhancement of tenure rights, and investments in internal infrastructure. Whether these measures will address the issues of landlessness, rural poverty and unemployment remains to be seen.

The history of land distribution and allocation forms an integral part in understanding the evolution of current issues raised in South Africa's land question. In this chapter, I will describe the historical processes of the apartheid-era which determined land ownership patterns; examine the government's land reform programme, its strengths and weaknesses; investigate the links between land reform and sustainable agriculture; and identify solutions to make land reform work. History is important as the

> ...racial restrictions on black farming and land ownership are not part of our history, they are our present. They are the parameters within which present rural (and urban) land struggles are being fought and, as such, provide the experience and reference points which inform African people's views and aims in relation to land.
>
> (Claassens, 1991, 50-51)

## 2.1. THE SOUTH AFRICAN AGRARIAN ECONOMY: A HISTORY OF DISPOSSESSION

The legacy of colonialism and apartheid has left deep scars on the South African landscape. Though South African society is by no means homogeneous, hardly any community has been left untouched by the laws of apartheid. However, the historical processes and outcomes of racial structuring varied considerably. For example agricultural patterns are varied, such as the persistence of labour tenancy in parts of South Africa and the entrenchment of wage-labour in the Western Cape. There are also a host of problems facing agricultural development in the former homelands that closely resemble the communal areas of Zimbabwe and Namibia. Thus, a historical analysis of land and agrarian questions greatly enhances ones insight into the present-day scenario.

The history of agriculture in South Africa has been shaped by dispossession, the entrenchment of capitalist agriculture and the development of a dual agricultural system (Bundy, 1988; Bernstein, 1997). Colonial settlement and expansion from 1652 - 1860s characterised two centuries of European colonial expansion and Dutch settlement in the Western Cape. The pattern which emerged from these processes was a mercantile economy with 'unfree' labour (slaves and survivors of indigenous Khoi) under the Dutch rule and in 1806, British colonial power. The mineral revolution in the 1860s resulted in marked changes in South African agriculture. For instance, tensions between labour demands for mining, commercial agriculture and freehold tenure increased (Bundy, 1988). The South African experience reveals that labour tenancy was common in the Transvaal and Natal provinces (See Figure 2.1.), where independent black farmers were competing with white commercial farmers up to the late nineteenth century (Bundy, 1988; Binswanger and Deininger, 1993). All this changed with the inception of the Union of South Africa in 1910 and the introduction of a series of Land Acts that limited the area in which blacks could own land. Although the 1894 Glen Grey Act limited black land ownership to 10 acres per farmer (Nyamapfene, 1995), the 1913 Acts

further limited this area to 8% of the country, which was extended to 13% in 1936 (Binswanger and Deininger, 1993). Of all the segregationist measures enacted, the Land Acts, illustrated in Table 2.1., were the most fundamental and symbolically the most important. Migrant labour was consolidated by limiting the areas reserved for blacks, helping to undermine black agricultural production and to stimulate the transition from sharecropping to labour tenancy to (unfree) wage labour - gradually capitalising white agriculture (Bernstein, 1996).

**MAJOR DEVELOPMENTS AND INFLUENCES ON LAND OWNERSHIP**

1913: Native Land Act 27 in which land deemed to be traditionally black was identified and reserved for exclusive use and occupation by black groups, this land constituted approximately 8% of the land in South Africa.

1936: Development and Trust Act 18 extended this land to 13% and introduced the concept of trust land. Approximately 13% of the land in the country was therefore reserved for 80% of the population.

1966: Group Areas Act 36 in which forced removals were undertaken to settle communities in areas designated for their race group.

1991: Abolition of Racially Based Land Measures Act 108 which repealed a number of statutes regulating land rights on the basis of racial classification.

Table 2.1: Legal instruments that influenced the ownership of, and access to land in South Africa (Source: van der Walt, 1995)

White commercial farmers facing competition from black farmers were assisted by the state through the passing of the Land Acts. The Land Acts initiated the legacy of a dual agricultural system of white commercial agriculture and black subsistence agriculture (primarily practised in the former homelands). In addition to the unequal distribution of land, government support for commercial farming through subsidisation of agricultural inputs (water, pesticides, irrigation), as well as marketing assistance, further cemented the supremacy of commercial over small-scale farming. Further biases against small-scale farming included the prohibition on the subdivision of land; and the restriction of blacks to the homelands which resulted in enforced overpopulation; overgrazing; and soil erosion. The environmental effects of small-scale commercial or subsistence agriculture in the homelands, were attributed to a lack of black knowledge, skills and concern for natural resources - with no recourse to examining the context of agricultural

development in the homelands at the time. This historical context has since been well-documented (Bundy, 1988; Cooper, 1991a; Durning, 1990; Letsoalo, 1987; Letsoalo, 1991).

As early as the 1930's, problems such as overcrowding, overgrazing and soil erosion were becoming apparent in the homelands. In 1936, legislation further extended the land allocated to blacks from 8% to 13%. However, up to the end of apartheid, some of the additional land was still not allocated (Bernstein, 1996). Successive land laws made it virtually impossible for blacks to purchase land (Claassens, 1991). Thus one finds that "...through layers of statutory interventions into the common law of property, a legislative map of South Africa has been drawn which divides the entire country into race zones" (Budlender and Latsky, 1991, 115). This is illustrated in Figure 2.1..

Crises of a social, political and biophysical nature emerged in the homelands. Customary law, infiltrated by apartheid law, resulted in a political legitimacy crisis. Political control of tribal structures, and the role played by tribal leadership in establishing and enforcing apartheid, is increasingly coming to the fore (van der Walt, 1995). Letsoalo has stated that the transformation of "traditional leadership from chieftancy to bureaucracy" (Letsoalo, 1991, 101) sowed the seeds for conflict over the role of traditional authorities in land reform. During the apartheid-era, environmental degradation, was attributed to the 'environmentally destructive' behaviour of black subsistence farmers. This was often cited as a motivation for development interventions, such as the notorious 'betterment' schemes described in Section 2.4.. 'Betterment' planning was initiated to address the problems of overgrazing and soil erosion in the homelands, presumed to be grounded in black attitudes towards the environment. This resulted in the persistence, in many instances, of the view that communal land tenure is inefficient and backward (van der Walt, 1995). However, the current tenure systems found in black rural areas have been shaped by the historical processes which almost completely transformed these agrarian systems. Investigations into communal tenure arrangements is an important requirement as it has been stated that indigenous black communal tenure systems was neither damaging to the environment nor society (Letsoalo, 1987). In view of the widespread distribution of communal tenure in the homelands, this claim requires further investigation. The physical effects of the apartheid legislation


Figure 2.1.: Land ownership patterns in apartheid-era South Africa

in the homelands were debilitating. The amount of land was not enough, there was a lack of facilities and agricultural support services - the homelands became a breeding ground for a social and ecological disaster (van der Walt, 1995). Overcrowding is only one of several issues which illustrate how land management processes, that stem from the apartheid-era, are rooted in state policies.

In addition to the land laws, a number of acts, which don't contain expressly racially discriminatory provisions, but which favoured white commercial agriculture were also passed. These include marketing acts, the subdivision of agricultural land, subsidisation of agriculture inputs, cheap credit and decreased labour costs through mechanisation. Despite these supportive policies the debt of many white farmers still increased (Binswanger and Deininger, 1993; Budlender and Latsky, 1991). This has resulted in the development of a seemingly successful commercial agricultural sector which is

> ...based on a system, heavily subsidised by the state, of expensive capital-intensive, cheap-labour production designed to secure and defend white monopoly and ownership and access in the sector. Intensive exploitation of labour is matched by a mining of natural resources, a tendency to over-capitalise and over-produce, to produce for export (often at a loss) rather than for the home market and so on. It can be shown that despite 'modern' farming methods (extensive machine-based production), the sector is relatively inefficient in terms of both capital and labour inputs.
>
> (Marcus, 1991, 38)

South Africa's land distribution patterns, the long history of oppression and lack of access to land and other resources presents many challenges. Land distribution patterns reflect grim statistics with approximately 55 000 commercial farmers having access to 102 million hectares of land, whereas 1.2 million black households have access to 17 million hectares in the former homelands (Marcus *et al.*, 1996). There is thus an urgent need for structural change in South African agriculture, but the existence of diverse farming patterns and claims to land will be informed by the contexts which exist in the different areas. There are, according to Bernstein "...different types of countryside, and the historical specificities of any given rural locality within them, generate different social and political dynamics around land and its uses" (Bernstein, 1997, 23). Claassens (1991) also refers to the existence of a myriad of claims from farm workers, labour tenants, and the landless. This land question is therefore not an easy task for any government to deal with.

The complexity of the land question inherited from the segregationist apartheid-era was exacerbated by changing economic forces. In agriculture, the macro-environment had changed, and commercial agriculture was facing a much more competitive environment than it had been accustomed to. Debt escalated due to high interest rates, farm employment was slowing and wages increasing. In contrast, very few agriculturists in the former homelands, despite the implementation of 'betterment' schemes (with the intention of improving small farmer practices) could maintain even a subsistence level of production (Bekker and Cross, 1992). In 1991, an investigation was undertaken into the opinion of farm workers, tenant farmers and farmers in the Western Transvaal regarding the looming land reforms. While farmers were concerned over land degradation and a lack of farming skills among farm workers, the views of the workers and tenants indicate that despite some people being aware of the looming changes, most people would be unable to benefit from the land reform programme. As Ishmael Shomang, a business-man and farmer said of the landless:

> How can you farm nowadays without money, without a tractor, plough, implements, diesel and a bakkie? No, these people have no hope to get land, less of farming it.
>
> (*New Ground*, 1991, 7)

In describing the build-up to the land reform programme, I will draw on van der Walt's (1995) chronology of the land question. The 1991 *White Paper on Land Reform* set out the broad policy decisions of the National Party government with regard to land reform. One of the key issues raised in this document was the introduction of land restitution, a policy whose acceptance by the National Party government resulted in the establishment of a Commission on Land Allocation (CLA). The CLA's objective was to use state-owned land for restitution purposes (Republic of South Africa, 1991). The fact that only state land would be considered for restitution severely limited consideration of other lands, particularly urban land claims. Also, the CLA had no power with regard to monetary compensation. The Commission was phased out in 1993 when a new land claims procedure was decided upon. The *Reconstruction and Development Programme* (RDP) (African National Congress (ANC), 1994), the policy document of the ANC which was published shortly before the elections in 1994, subsequently became the official policy of the Government, in the form of the *White Paper on Reconstruction and Development* (1994). This provided the basis for land reform policy.

The 1994 *White Paper* acknowledges land reform as an important component of the RDP, but it does not take up the issues highlighted in the original RDP. The initial RDP document highlights the need for a national land reform programme which can supply residential and productive land to the poorest section of society, and redistribute 30% of agricultural land within the first five years of the programme. The various aspects of the current land reform programme, namely tenure security, redistribution and restitution were also included. Notwithstanding the watered-down version of the RDP, the government quickly illustrated its commitment by initiating the Land Reform Pilot Programme (LRPP) in early 1995. This formed the first leg of the redistribution sub-programme which involved a settlement support process in various rural areas in each province. Participation, control and responsibility at the lowest levels were keywords in the implementation of the programme. It was hoped that the experience gained in the LRPP would feed into future programmes. Another major development was the establishment of the Land Claims Court and the Commission on the Restitution of Land Rights which would administer land restitution claims (van der Walt, 1995). Subsequent to this, several policy documents have been developed, while a suite of land reform legislation has been enacted (DLA, 1996; DLA, 1997a). The functions of the DLA, at the various governmental levels is illustrated in Figure 2.2.

The implementation of the land reform programme has met with many constraints. These include macro-economic and fiscal restrictions (related to budgetary allocations); constitutional barriers (the entrenchment of the Property clause in the constitution set the parameters of the programme); organisational and capacity limits (lack of rural organisation and skills); lack of physical resources (lack of arable land and climatic variability); governance problems (lack of co-ordination) and institutional constraints (transaction costs and access to financial services to obtain land at market value) (Murray, 1994; Adams, 1995; DLA, 1997a). Other constraints include the politically manageable nature of the 1913 cut-off date for redistribution. At the Community Land Conference in February 1994, 356 rural communities set the date for restitution claims at 1652 (*Just Land*, 1994; Cousins, 1998). The government's strategy of a market-assisted approach in land reform has also been criticised for reproducing white commercial agriculture by creating a wealthy land-owning class and a poverty-stricken landless class (Bernstein, 1997; Levin and Weiner, 1993/1994).

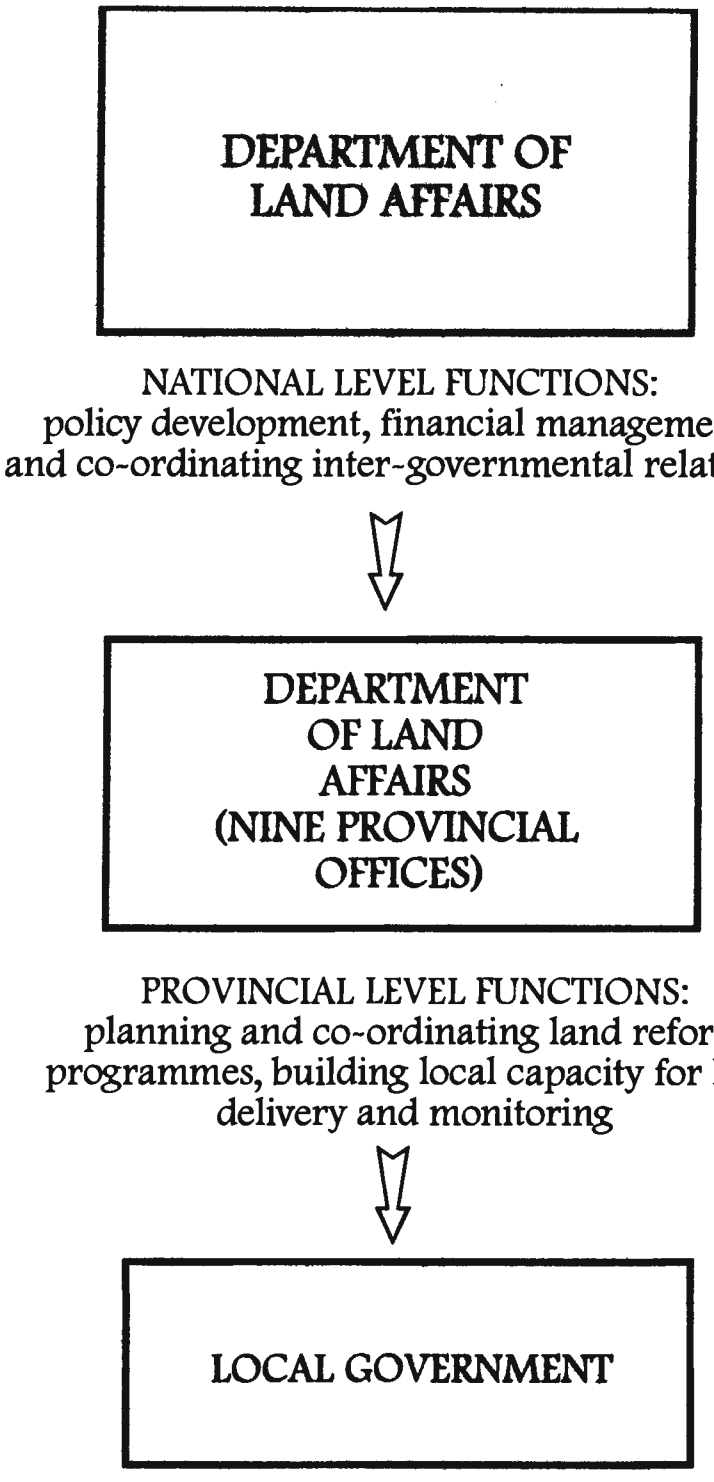


Figure 2.2.: The structure of the Department of Land Affairs (DLA, 1997a)

Market-driven land reform measures, particularly within the redistribution

component of the programme, has been put forward by the DLA, but all indications are that affordability is perhaps the biggest constraint to the implementation of the programme. Many rural poor will be unable to purchase land at market value, even with the assistance of the settlement/land acquisition grant. In order to address the land and agrarian questions of South Africa, land reform policy and implementation processes need to move beyond neo-liberal market-based approaches to address the fundamental questions related to power relations.

## 2.2. CURRENT LAND AND AGRARIAN QUESTIONS IN SOUTH AFRICA

The repeal of apartheid legislation has occurred, the first democratic election has been held and the land question is being addressed by the government. Despite the commitment expressed by the government towards the land reform programme, many have questioned whether the negotiated settlement which characterised South Africa's road to democracy, resulted in too many compromises on the land issue (Bernstein, 1997; Levin and Weiner, 1996; Cousins, 1998; Marais, 1998). Research conducted in Namibia indicates that the negotiated settlement entered into by SWAPO (South West Africa People's Organisation), compromised on the stated need of strong state intervention and historic recompense required to address land distribution (Pankhurst, 1995). An important indication of the international forces which impacted on the Namibian land reform programme, is the fact that substantive land reforms are seen as "an anathema to the free market ideology on which the predominant continent-wide policy framework of structural adjustment rests" (Pankhurst, 1995, 554). Experience of land reform in countries like Namibia and Zimbabwe, developed along similar lines to that of South Africa, have been ineffectual in responding to the land question, what does experience with South Africa's land reform programme reveal thus far?

The land question can be seen as one of the most pressing political issues - it is entrenched in the segregationist policies which resulted in skewed land ownership patterns. This was also reflected in the access to a range of services which included credit, marketing, subsidisation of inputs. The 1913 Native Land Act prohibited blacks from owning, renting or buying land while the 1936 Native Trust and Land Act involved forced removals which was further compounded by the Group Areas Act of 1956. What then was the opinion of land reform policy makers on the eve of

the elections in South Africa?

A study which focused on the position of the elite (opinion-makers, political leaders) with regard to land reform was conducted in 1992. Of the survey sample, 72% respondents were male and 96% white. The survey established a convergence of opinion on many issues, such as the need for land redistribution and limited expropriation, thus indicating the possibility for an equitable and sustainable solution to the land problem. However, there were divergent opinions from the far right (Conservative Party, now Freedom Front) and the left (Pan Africanist Congress) (Kotzé and Basson, 1993). In 1993, the findings of a comparative study on the positions of the ANC, the State, Urban Foundation, Development Bank and the World Bank on a range of land-related issues, was released. Issues raised included land expropriation, land use, redistribution and the selection of beneficiaries in the land reform process. The findings indicated that in general there was no agreement between the ANC and the state and that the state had not begun to fathom the need for major land reform (Marcus, 1993). These differing visions on land reform went to the table at the negotiations in Kempton Park. South Africa's democratic transition as 'unfinished business' (Murray, 1994; Bernstein, 1996), reflects a failure to resolve key issues such as the land question. It has been suggested that the

> alliance between moderates and reformers brings about a form of democracy which to a large extent preserves the existing status quo through an inevitable social and economic conservatism.
>
> (Levin and Weiner, 1996, 95)

The lack of attention paid to the land question is also related to the nature of the mass struggle. Throughout the 1980s there was a build-up to dismantling apartheid, resulting in mass uprisings throughout South Africa. However, on various levels of political organisation, ranging from national to local level, land and agrarian issues were not sufficiently politicised. This resulted in an absence of the popular politics of agriculture, partly due to historical factors, such as the repression of land-related rural struggles and the urban-character of the mass uprisings of the 1980's. Where rural struggles did occur, youth organisations and residents' associations formed the stalwarts rather than peasant associations. The potential of combining political struggle with production was therefore not fully realised (Bundy, 1987; Levin and Weiner, 1996). Land did not feature very strongly on the agenda of the ANC, despite the work of one of its affiliate bodies, the Land and Agriculture Policy Centre (LAPC). Though a Community Land Conference was held in 1994, the government's

failure to take into account the inputs of rural communities highlighted the lack of attention given to the land issue (Levin and Weiner, 1996). The long history of dispossession and transition to wage labour characterises much of agriculture, especially in the areas of intensive arable agriculture, such as the Western Cape. Bernstein adds that the polarisation of South Africa's agrarian question is due to this long history of dispossession, and the fact that the agrarian question is currently of limited concern on the global scale (Bernstein, 1996). Thus, the *Freedom Charter's* demands of 'land for the tiller' has been waylaid. This demand is neither anachronistic nor populist, it simply does not resonate with the government's land and policy formulations. Within agriculture, the South African class formation, combined with capitalist development resulted in an agrarian system exhibiting many of the characteristics of capitalist agriculture - a diminishing core of permanent, more skilled workers and a casual, often seasonal, labour force. In the post-apartheid agrarian economy,

> Capitalist landed property/agriculture seeks to expunge or deny the foundations of its historical formation in land expropriation, brutal labour regimes and state support. Its position today, if anything, is strengthened by the confirmation of bourgeois property rights in general, and beyond that, by the economic policies and practices of the government. These continued the commitment to liberalisation and privatisation that emerged under late apartheid...capitalist landed property/agriculture stakes its place in the new South Africa on the claim of its 'efficiency' in a non-racial capitalism, while white farmers retain a *de facto*, if no longer *de jure*, near monopoly of resources and institutional, as well as economic, power in the countryside.
> (Bernstein, 1997, 22)

One of the broad aims of the land reform programme was to reform the economic structures which support commercial agriculture and support the emergence of small-scale farmers (Williams, 1996). Based on the recommendations of the World Bank's Rural Restructuring Programme, presented at a conference on land redistribution options organised by the LAPC in 1993, small-scale farming became a central concern of the land and agriculture policy documents (World Bank, 1993; Department of Agriculture, 1995a; DLA, 1997a). The work of rural development researchers also furthered the small farmer cause (Lipton and Lipton, 1993). The acceptance of the World Bank's recommendations, reflected in the adoption of 30% transfer of agricultural land to black smallholders in the RDP (ANC, 1994) and the market-based land redistribution sub-programme (DLA, 1997a), indicates the acceptance of the neo-liberal approaches to land and agrarian reform in South Africa. The small farmer development path, advocated by the World Bank's study,

proposes that a small-scale farming sector be created in which beneficiaries would be assisted with a grant and provided with support services, such as access to credit, marketing services and technological assistance (Binswanger and Deininger, 1993). Within the current land reform programme, the creation of this small farmer class has been very slow (Bonti-Akomah, 1998). Limited transformation of agricultural extension services from one geared towards assisting commercial farmers towards a small farmer clientele, a lack of functional integration, particularly between the provincial level government departments, and limited small farmer land use models, impedes the creation of a small farmer class. The inability "to find significant allies among the social forces that dominate the debate of agricultural policy/agrarian reform in South Africa" (Bernstein, 1997, 11), further compound the uptake of the small farmer model. In its stead, conventional commercial agriculture has been accepted as an effective, productive, and efficient model for land reform beneficiaries. This can be illustrated in the increased focus on the initiation of farm equity share schemes (FESS) in the land redistribution sub-programme. The Warmwater Farming Trust, described in Chapter Six, was constituted as such a land reform model.

The DLA has established a national help desk and produced a pamphlet detailing the procedure involved in establishing a FESS. In the pamphlet, a farm equity share scheme "is a partnership arrangement between a commercial farming enterprise or private sector investor and the beneficiaries of land reform" (DLA, n.d.). The recipients of the settlement/land acquisition grant enter into a partnership or agreement with a farmer which results in ownership of land or sharing of profits. The value of the grant which is invested in the farm enterprise is held as an equity share by the share holders. It has been said that these schemes should significantly improve the security of tenure of farm workers, contribute to land redistribution, reconciliation and harmony (DLA, n.d.). FESS have been implemented throughout the country, as examples from the Western Cape (Davis, 1994) and Mpumalanga (Forrest, 1996) indicate. At a seminar which looked at the viability of FESS, the conditions for viability was stated as the presence of a relationship of trust, on-going skills training and the need to develop the process prior to the scheme (Hamman, 1997). FESS are therefore not a means to achieve good labour relationships, but are rather a result of them (Grimm, 1998). Advantages of the FESS include farm workers becoming shareholders, having an income upon retirement, stabilising employment and increasing efficiency and production.

Obstacles to the FESS schemes include investment procedures which are difficult to understand, farm owners feeling 'threatened' by sharing decisionmaking, the need for high investments and limited options to mechanise (Grimm, 1998). There is also the view that the greatest beneficiaries of the FESS model would be the private sector investor, be it a commercial farmer or private company. A cash offer is usually made by the individual or group purchasing the land, resulting in direct benefits to the private sector (Samson, 1997). Partnerships with the private sector have become an important aspect of the land redistribution sub-programme. This could be due to the prevalence of 'production for profits' thinking in the agricultural policy arena. In addition, the benefits of these schemes accrue to the participants of FESS, with hardly any impact on the lives of other rural dwellers, especially in the rural townships and former homelands. In view of the fact that rural people experience among the highest levels of poverty in the country (SALDRU, 1995), it is imperative that land reform deal with broadening access to land for residential and productive purposes. Through its emphasis on market-based land reform, the land reform programme is in danger of undervaluing the agrarian questions of the rural poor.

At the macro-economic level, the governments political will and market-driven approach to land redistribution, accentuated with the adoption of the Growth, Equity and Reconstruction (GEAR) macro-economic policy (Samson, 1997), has questioned the commitment to resolve the land question, since poor peasants and rural proletarians will remain marginalised (Levin and Weiner, 1996). The need for political will is imperative if the land reform programme is to have any meaningful benefit for the citizens of South Africa (Adams, 1995). At the constitutional level, the entrenchment of property rights has limited the opportunities for expropriation of land, even where inefficient farmers are involved (Samson, 1997). Despite these philosophical and ideological constraints observed at the policy level, there are a number of questions which still remain unanswered. These incorporate technical considerations pertaining to the implementation of the land reform programme.

Reductions in the budget for both the DLA and the Department of Agriculture (DoA), raises questions about the government's political commitment to address inequality, rural development, land delivery and upliftment (Samson, 1997). The value of the settlement grant, R 15 000 per household, is a paltry sum in view of the cost of agricultural land (Bonti-Akomah, 1998). This has raised important questions on the agrarian focus in land reform. Perhaps limited financial resources should

rather be directed towards creating jobs, providing housing, piped water and electricity - thereby broadening the scope of the land reform programme to address rural poverty. The settlement grant could then be used to obtain land for residential purposes, with recourse to production for household security (Williams, 1996). Land and farming must not be conflated - a land reform programme in the rural areas must address the issues of importance - such as increasing unemployment, poverty, institutional struggles and land insecurity (Cross, 1998). While this may appear as a cop-out, there are increasing indications that the land reform programme is not near to achieving the transfer of 30% of productive land within five years, outlined in the original RDP document (ANC, 1994).

In order to keep the wheel turning though, governmental departments dealing with land reform should incorporate the provision of agricultural support services into land reform (Samson, 1997). The failure to provide land use planning and follow-up support, have contributed to the collapse of land reform programmes in other countries (Cliffe, 1994; Meliczek, 1995). The lack of administrative capacity to deal with land reform is also a major problem (Adams, 1995; Samson, 1997) and the capacity of government (local, provincial or national) to implement their chosen policies is questionable (Williams, 1996). In view of the role that local and provincial governments should play in administering the land reform process (See Figure 2.2.), this lack of capacity is an important issue which needs to be confronted. The mechanisms of the land reform process also holds many tensions and possible contradictions, for example the 1913 cut-off date in restitution claims excludes earlier (valid) claims; the hierarchical structuring of the beneficiaries of land reform could be problematic; and competing claims to land could lead to conflict (de Wet, 1997). The return of the land to the Elandskloof community in the Western Cape in 1996, the first ruling of the Land Claims Court, marked a historic and symbolically important occasion (Randall, 1996). However, it is imperative that land restitution does not overshadow the need for a more generalised land reform programme (Marcus, 1993). Conceding the conflict and contradictions within the land reform process, displayed at the ideological, policy and practical levels, could facilitate the development of alternative approaches aimed at extending the reach of land reform in South Africa. Without abandoning the goals of land reform, it has become apparent that the neo-liberal, market-based bent of the land reform programme is inadequate in its formulation of the values and practices required to heal the land. Lessons gleaned from the experience of other countries are drawn

upon in Section 2.3. to formulate solutions to the obstacles currently besetting the land reform programme.

## 2.3. MAKING LAND REFORM WORK

> The general progress of the land reform programme to date is unimpressive in terms of households resettled or gaining security of tenure, but more impressive in terms of setting up institutional structures, establishing planning procedures, and learning to identify and overcome the delivery bottlenecks at different levels.
>
> (May, 1998, 243)

Tenure reform affects approximately 6 million households living in the former homelands, informal settlements in urban and rural areas and permanent farm workers living on-farm. Thus it has the furthest reach of the land reform sub-components, benefiting the most people. Land redistribution could benefit approximately 1.5 million households, while restitution affects no more than 500 000 households in urban and rural areas (May, 1998). There has been much more progress on the policy front, and serious questions relating to administrative capacity to implement land reform and financial constraints have been raised. Among these has been a questioning of the neo-liberal ideological bent within the land reform programme.

A neo-liberal orientation to land reform is evident in a number of African countries, for example Zimbabwe and Kenya, where a negotiated settlement, similar in nature to South Africa's transition to 'democracy', occurred. Thus, the adoption of a market-based land reform programme, building on the recommendations of the 1993 World Bank report, *Options for land reform in South Africa*, came as no surprise (World Bank, 1993; Murray, 1994). Despite calls for stronger state intervention, the need to de-regulate South Africa's over-regulated agriculture, has been cited as a prime motivation for minimising state input into land reform (Lipton, 1994). In its place, one finds the market. However, it should be recognised that it is not enough for the state to promote the market, "powerful market organisations can be equally exploitative, and can harness the state to the defense of their interests above all else" (Shepherd, 1998, 22). In order to respond to the land and agrarian challenges, the state needs to play a pivotal role in redirecting rural infrastructure, research, training and support services towards creating rural environments

conducive to land and agrarian reform (Lipton, 1994).

Land policy development therefore needs to be located within the broader South African development discourse, which has moved from the Reconstruction and Development Programme (RDP) to the adoption of the macro-economic strategy, GEAR. The RDP, the vision document of the African National Congress (ANC), outlined six principles which included the development of a people-driven, integrated and sustainable programme; the provision of peace and security; linking reconstruction and development; contributing to nation-building and the democratisation of South Africa (ANC, 1994). Two years later, in 1996, the RDP Minister was reallocated and the office was virtually abolished - to be effectively replaced by GEAR, the macro-economic development strategy formulated in 1996 (Munslow and Fitzgerald, 1997; Marais, 1998). While the RDP vision of meeting basic needs and developing human resources has been adopted in certain government departments, for example the Department of Water Affairs and Forestry, the acceptance of "neo-liberal conventional wisdom" in the form of GEAR has been mooted as the development strategy of South Africa (Munslow and Fitzgerald, 1997). Though the leaning towards a neo-liberal framework was evident in the dilution of RDP principles in the *White Paper on Reconstruction and Development*, GEAR has fortified this framework in its adoption of "the essential tenets and policy recommendations of the neo-liberal framework advocated by the IMF in its structural adjustment programme" (National Institute for Economic Policy, 1996, 2). Despite mounting evidence on the negative impact of structural adjustment programmes (Kendie, 1995), policy guidelines directed at creating a competitive, fast-growing economy creating jobs, have been adopted (Munslow and Fitzgerald, 1997). Tensions between economic growth versus sustainable growth versus job creation, are not addressed, neither is the focus on expanding exports versus evidence which shows that "production for domestic market is often more significantly more job creating than production for exports" (National Institute for Economic Policy, 1996, 5).

While the development discourse has always had an important impact on the lives of South Africans, whether in the form of separate development, depoliticised betterment planning or the reformist discourse of the 1980s, it is ironical that 'development' has now become integral to the discourse of traditional anti-apartheid forces (Tapscott, 1995). However, "given the structural problems inherited from the

apartheid economy, it is unrealistic to argue that we can achieve sustainable growth in less than five years if the concept of sustainability is linked to profound transformation in the economy" (National Institute for Economic Policy, 1996, 5). Hence, concerns with the trajectory of current development discourse on precisely this, the transformative effects of GEAR, has also been raised in land and agriculture debates. Thus, recommendations for the land reform programme must be rooted in an understanding of the broader development discourse.

More grounded recommendations relate to the lack of functional integration of DLA and DoA, the strong influence of the World Bank on the programme, and the difficulties of reconciling welfarist vs. economic growth objectives (Stewart, 1996; Williams, 1996; Hamman, 1997). A number of researchers have formulated recommendations for South Africa's land reform programme, which hold within them the seeds of an equitable and sustainable programme. In addition to international experiences, these recommendations are reviewed below.

In this century, redistributive land reform has taken different forms, for example 'land for the tiller' in Asia and the Middle East, where the contexts have been highly specific and land tenancy an established practice. In Latin America it took the form of redistributing estates (haciendas); in Africa redistribution of white-owned land (Namibia, Kenya, Zimbabwe) and in the former Soviet Union and Eastern Europe de-collectivisation of land (Adams, 1995). The experiences of other countries can greatly assist South Africa to make a success of the land reform programme. The successes noted in East Asia (Japan, South Korea, Taiwan) were formulated in a context in which labour tenancy was prevalent, whereas the Latin American reforms dealt with large operating units. From Latin America the difficulties in dealing with large units, and the need for adding service provision to land reform, constitute important lessons (Bruce, 1998).

Closely resembling the situation in Latin America is that of Kenya and Zimbabwe, which involved white ownership of commercial farms. Decisions had to be made on the parcelisation of land, and while some believed this worked in Kenya, it failed in Zimbabwe (Bruce, 1998; See Cliffe, 1994 for a contrasting viewpoint). Zimbabwe and Namibia's land distribution patterns and transitions to democratic governments are very similar to South Africa, for example in Zimbabwe black farmers were pushed onto marginal land ('communal lands'), the negotiated settlement in

Namibia and Zimbabwe protected the property rights of white commercial farmers against expropriation (as in South Africa), while in Namibia, a South African colony until 1990, 90% of the population were confined to 40% of the land (Durning, 1990). Reflecting on the South African experience, the lessons from land reform in Zimbabwe, Namibia and Kenya have been drawn upon often, primarily due to similarities in land distribution patterns. These African experiences contain important lessons, such as the importance of constitutional and legal issues (property rights); the need for agricultural support services; the misconception that African agricultural practices are unsustainable; a range of land use models; and the importance of addressing the pressing socio-economic and environmental problems in the communal areas/homelands (Munyuki, 1991; Cliffe, 1994; Nyamapfene, 1995; Pankhurst, 1995; Bromley, 1995). Though the literature on the experiences of these countries yield contradictory views and counter-claims, they still form a knowledge base which can enhance South Africa's land reform programme and provide valuable insights into the search for solutions.

Recommendations, arising from experiences in these countries, include that of livelihoods and production planning, which until recently, have come a distant second to considerations of justice. Financially viable livelihoods have been assumed and community planning exercises in the land reform programme have been rushed (Cross, 1998). One of the ways in which to facilitate land use planning procedures is through the participation of land reform beneficiaries to ensure that the initiation of

> local-level participatory research, results and policy ideas can be translated into specific land use plans which are technically, politically, ecologically and socially sound.
>
> (Levin and Weiner, 1996, 114).

Increased post-settlement support aimed at ensuring that agricultural sustainability and social transformation is incorporated in land reform, constitutes an important complementary measure to ensuring access to land. I will explore this point in Section 2.4. to illustrate the relevance of a sustainable agriculture-based livelihoods framework for facilitating beneficiary participation. The relationship between land reform and environmental concerns; the key environmental issues in rural areas which arise from agriculture, and the incorporation of agricultural sustainability in the land reform programme, is also discussed. Land reform beneficiaries inherit the environmental legacy of apartheid (Durning, 1990), which command a

consideration of alternative production systems, such as sustainable agriculture. By failing to develop alternative imaginaries of the land-agriculture nexus, land reform beneficiaries risk repeating the apartheid delusion of production for profit. The environmental conditions in the rural areas of South Africa, warrants the search for a broad-based sustainable agriculture, an imperative for the success of the land reform programme in South Africa.

## 2.4. SUSTAINABLE AGRICULTURE-BASED LIVELIHOODS?

One of the most important environmental challenges facing South Africa is the land question (Allen, 1994; Marcus *et al.*, 1996). The main challenge is "to redistribute land fairly, without impairing the productive potential and ecological sustainability of the rural economy" (Glavovic, 1991). However, the history of institutionalised racism and dispossession of land has played an integral part in the creation of many environmental problems (Durning, 1990). The historical processes which led to dispossession, forced removals and enforced overcrowding in the homelands and bad agricultural practices which were employed in the 'protected' commercial sector, has definitely contributed to the state of the environment in South Africa today.

Though South Africa often projects an image of a world conservation leader, the activities of the conservation movement occurred within the framework of apartheid policy (Khan, 1997a). Many of South Africa's conservation initiatives are noteworthy, but historical studies are beginning to reveal the 'other' side of conservation which entailed displacing communities dependent on the land, denying access to land and water resources and controlling access to conservation areas. Researchers are also beginning to unravel the implications of apartheid policies on environmental perception amongst blacks (Cock and Koch, 1991; Khan, 1994; Beinart and Coates, 1995; Khan, 1997b). The perception which emerges is one of conservation as a "wildlife-centred, preservationist approach" (Khan, 1994, 503) with little place to accommodate the needs of people. In addition, the existence of a black environmental ethic was completely ignored in the apartheid-era conservation movement - be it focused on issues of agriculture or wildlife management. In the words of a South African environmental historian:

> The impress of history has been particularly marked in the sphere of environmental perception, in that South Africans, both black and white, have had their perceptions of the environment shaped by the political forces of the past. Historical and political factors such as the impact of the colonising process, the dispossession of blacks, the effect of racial attitudes, discriminatory legislation and the imposition of the apartheid system in 1948, have had a significant impact on the development of environmental attitudes.
>
> (Khan, 1994, 499)

However, current initiatives to involve black communities living adjacent to conservation areas have increased (Meintjies, 1995). Coupled to dispossession from conservation areas, the implementation of agricultural support services, such as the 'betterment' schemes and soil conservation practices which were enforced in the former homelands, also contributed to the environmental perceptions of blacks. 'Betterment' schemes involved a range of measures, such as fencing off grazing areas; constructing contour banks; sub-division of rural land into grazing, residential and arable land and forcibly settling people onto smaller units of land (Krüger, 1991). These schemes met with bitter resentment and, though implemented to improve environmental conditions, only served to alienate people further. However, the concept of environmental well-being is increasingly being linked to developmental issues (water, housing, sanitation); community participation in environmental issues has increased (waste management, open space planning); and policy development is increasingly incorporating environmental concerns. Issues of the environment and social justice are increasingly being interlinked (Glavovic, 1991; National Land Committee, 1996). With the inception of a land reform programme, there have been concerns over the environmental effects of land reform, such as inadequate land use planning (Cowling, 1991; Allen, 1994). However, land reform does present an opportunity to address the legacy of mistrust and suspicion left by a tradition of imposed conservation measures (Khan, 1990c) and to restructure agriculture on environmental grounds (Lebert, 1994).

Rural environmental issues are often linked to the effects of agricultural practices. Chief amongst these is the loss of topsoil which has been attributed to poor agricultural practices by commercial farmers as well as small-scale farmers in the former homelands. The extension of monocropping into marginal lands (aided by subsidisation of fertilisers and irrigation) has resulted in serious soil erosion - on-site cost (reduced soil fertility) and off-site costs (increased siltation and run-off). Annual soil losses are estimated at 300 - 400 million tons (Schoeman and Scotney,

1987; van Zyl *et al.*, 1996). This also results in nutrient losses. Most of the soil losses are related to cultivation practices. Non-arable land uses, such as grazing, forestry, conservation - especially in the former homelands has also resulted in overstocking and soil erosion. About 60% of South Africa's soils have a low organic content and the soil is highly susceptible to erosion when used intensively. Soil degradation is made greater off-site than on-site as water is degraded through increased sedimentation, siltation and eutrophication, caused largely by crop and rangeland farming. Access to water is very important and water scarcity is caused by climatic factors, as well as the allocation and distribution which was informed by policies that favoured white agriculture, industry and domestic use. However, the situation in the homelands is a reflection of the politics of the time which resulted in enforced overcrowding, overstocking and ploughing of marginal lands, in which "poverty can best be understood as a form of grave imbalance in the wide ecological system" (Wilson, 1991, 37).

The environmental effects resulting from the chemically and mechanically-intensive practices in the commercial agricultural sector have often been underplayed in view of the important role of agriculture in the South African economy. From the inappropriate use of chemicals and dependence on pesticides, commercial agriculture's success has been largely due to policy distortions, such as government subsidisation which enabled farmers to grow crops in marginal areas (Cooper, 1991b, Lebert, 1994; van Zyl *et al.*, 1996). Other environmental effects of agriculture include salinisation of soil and water resources, overstocking and soil compaction (Cowling, 1991; Glavovic, 1991; Lebert, 1994). Additional environmental issues, pertaining to rural land use, include the subdivision of agricultural land, the efficiency of small farmers, the viability of communal tenure systems and the demands of communities bordering protected natural areas (Glavovic, 1991). These environmental concerns present weighty challenges for the implementation of the land reform. It also raises the need for increasing the link between policy formulations and land use practices.

In linking environmental issues to land reform, the spatial and temporal diversity of South African environments, with respect to ecological variables such as climate, geology and vegetation types should be noted (Cowling, 1991). Land reform poses a threat in contributing to the degradation of limited resources, such as soil and water. Without the provision of adequate support services, which include the

provision of agricultural extension services, land reform beneficiaries will not be equipped to develop environmentally and socially just farming systems. Instead, land reform will perpetuate the society-nature dialectic created by the segregationist apartheid policies by failing to provide equitable solutions to the land and agrarian questions of the rural poor.

The vicissitude of the South African landscape, and the range of climatic and ecological conditions, result in a tremendous variety of ecological systems, ranging from semi-desert to sub-tropical (Marcus *et al.*, 1996). The climatic and topographic diversity of South African environments is reflected in the rainfall patterns: winter rainfall in the Western Cape; sub-tropical summer rains on the east coast; and summer rainfall in the rest of the country. Drought, a common occurrence in the interior regions, is indicative of the fact that approximately two thirds of South Africa receives rainfall of less than 500 millimetres.

Land resources reflect a range of land uses, incorporating arable and non-arable agricultural activities. Non-arable land is used for extensive farming (rangeland; game farming); nature conservation and forestry. The general view is that arable land resources is fully utilised, but with varying degrees of efficiency. South Africa's total area is 122 million hectares and estimates are that the land suitable for crop production (in the predominantly white areas) represents only 13.5% of the surface area of the country (Schoeman and Scotney, 1987). While theoretically 14.3 million hectares of land is suitable for crop production, only 12.9 million hectares were cultivated by 1986 - of the land used for farming only 4 million hectares (less than 3%) are considered high potential. The result of past incentive structures has seen the widespread use of marginal land for crop production. South Africa has relatively little irrigation potential, with a total potential of 1.5 million hectares of which 1.2 million is presently utilised. Irrigation potential is limited by a seasonally variable and unreliable water supply.

As irrigation water is subsidised, it is generally priced at a fraction of its actual cost. The scarcity of water resources, characterised by seasonal variability and poor distribution patterns, is worsened by wasteful agricultural practices. Irrigated agriculture is the largest user of water, despite the fact that it is not as reliable as other sectors, due to its dependence on variable climatic patterns (Department of Water Affairs and Forestry, 1997). Heavy subsidisation of agricultural inputs, which

included water for irrigation, led to a situation in which many farmers were not paying the 'true' costs of water utilisation (Marcus *et al.*, 1996; van Zyl *et al.*, 1996).

Agricultural potential is therefore not very high and indications of the inefficiency of the commercial agricultural sector (*New Ground*, 1990; Cowling, 1991; Lebert, 1994; Cooper *et al.*, 1996), as well as restructuring of communal tenure, indicates the need for the incorporation of land use planning in land reform programmes. Land use planning would ensure that the problems associated with past and current agricultural production practices are not replicated. To this end, the land reform programme has included environmental sustainability as a key principle in ensuring that land is used in a wise manner (DLA, 1997a). While those designing land reform have stated that sustainability is central to the process, those opposed to land reform have based their arguments on environmental grounds (Munnik and Marinovich, 1991; Munnik, 1995; Cooper *et al.*, 1996). Environmental concerns within the land reform process are therefore very complex and deal with a range of issues such as dispossession from conservation areas; the farm-size productivity debate; freehold vs. communal tenure and land use planning. The distribution and accessibility of natural resources have thus been influenced by historico-political factors, resulting in the need to address environmental scarcity which results from unequal access to resources, too many people in a limited space, and the over-utilisation of renewable resources, such as soil and water (Cooper *et al.*, 1996).

A number of factors could play a contributory role in facilitating sustainable land use, these include ensuring security of tenure; providing education and extension services for agricultural conservation; implementing sound land use planning processes and environmental guidelines; and providing infrastructural support such as markets (Cooper *et al.*, 1996). The increased focus on the incorporation of environmental issues into the land reform programme is reflected in recent studies and workshops dealing particularly with land reform, natural resource management and sustainable development (National Land Committee, 1996; Turner, 1997). Strategies proposed by the DLA in the *White Paper* include integrated environmental management procedures in settlement planning, appointing community facilitators to assist beneficiaries to plan for sustainable land use, and ensuring the "participation of affected individuals and communities as partners in the process" of sustainable land development (DLA, 1997a, 23). Incorporating environmental considerations in land reform is therefore about

ensuring that there are support services, infrastructure and a range of mechanisms which enable people to implement sustainable land use practices (Marcus *et al.*, 1996).

One of the key issues emerging from the literature on land reform, environment and development, is community participation. However, one of the major obstacles to participation in natural resource management has been the limited administrative capacity of government, as well as organisational capacity on the ground. The limited capacity of rural civil society and provincial and local government has been identified by DLA as a key constraint to the implementation of the land reform programme. An alternative approach, that of community-based initiatives, has been advanced. Thus by

> actively participating in the planning process, both the applicants and the officials will learn what options are practicable and possible. The assessment of environmental sustainability should not be the prerogative of officials alone.
>
> (DLA, 1997a, 26)

The involvement of communities to plan and monitor the progress of their own development is one way in which to increase participation in achieving sustainable land use practices. A study commissioned by the LAPC on the monitoring and evaluation of the environmental impacts resulting from the land reform programme was undertaken in 1995 (Wynberg, 1995). The research involved designing a process for monitoring and evaluating the environmental impacts which result from the land reform programme; assessing the significance of impacts; developing indicators and standards to assist in monitoring and to building the capacity of communities by involving them in monitoring the environment. The monitoring system was required to be minimal, rapid and cheap. The original recommendations included employing the services of local communities to act as monitoring officers, thus initiating a community-based monitoring system. Input from specialist consultants would also form an integral part of the system. The system was tested with two communities participating in the Land Reform Pilot Project and it was decided that environmental considerations, as a separate system, is not workable and was therefore interlinked with surveys of other components (development of local services; farm and non-farm income and wealth, and land use format). The notion of community-based assessment was not adopted, possibly due to the costs of training requirements which such an approach would entail (Wynberg, 1995).

Nevertheless, the diminishing administrative capacity of land reform officials, indicate the need to investigate the viability of locally-driven procedures aimed at achieving sustainable agriculture-based livelihoods within the land reform programme.

The increase in community-based sustainability research, in addition to the formal establishment of the Monitoring and Evaluation Directorate in the DLA, has confirmed the relevance of monitoring in the land reform programme (Wynberg, 1995; Cooper *et al.*, 1996; Marcus *et al.*, 1996; DLA, 1997a). Though the Directorate is primarily involved in tracking the progress of land reform through its national and provincial departments, recommendations made by researchers have motivated for the implementation of monitoring systems at the community/project level (Cooper *et al.*, 1996; Marcus *et al.*, 1996). Indicators could act as a tool to improve management practices and provide a way in which members of local communities can identify changes requiring very few scientific or technical skills.

> Monitoring natural resource use will be important, and can be done effectively by the users of the resource themselves. One cannot legislate better management, but incentives and support such as extension services and education can encourage behavioural patterns and land use practices which encourage the sustainable use of natural resources.
>
> (Marcus *et al.*, 1996, 122)

On the eve of the elections in 1999, land reform still remains one of the biggest challenges of the post-apartheid government. Yet many land and agrarian questions, steeped in the historical processes of land dispossession of the colonial and apartheid-eras, remain unresolved. The influence of World Bank recommendations on the land reform programme, the inadequate promotion of small-scale agriculture, and the absence of agricultural issues in the populist political arena, contribute to the perpetuation of neo-liberal discourses on land and agrarian questions. An understanding of such structural forces in constraining local action is significant in highlighting the society-nature dialectic presented by the land and agrarian reform context of my thesis. The actions of land reform beneficiaries, such as the farmers of Warmwater, are bounded by these structural forces which dominate land reform thinking. Recommendations, aimed at making land reform work, include that of community-based participation in land use planning and decisionmaking processes. This emphasises delineates the important role of local actors in formulating strategies to enhance their security, offset risks, and increase

their quality of life. The negative effects of conventional commercial agriculture on South African rural environments justifies the search for alternative approaches to agriculture. The land reform programme should, in principle, not contribute to environmental degradation. Hence, to complement the decreased capacities of government to provide support services at the scale required, the role of community-based monitoring of land reform has been put forward. The participatory monitoring process, developed with the farmers of the Warmwater Farming Trust, is an example of such local-level action.

Agricultural land use options in the land reform programme requires the incorporation of not only environmental sustainability, but a consideration of social and economic issues as well. If land reform presents an opportunity for agrarian restructuring (Cooper 1991b; Lebert, 1994), ways of promoting sustainable agriculture should be investigated. Land reform contains implicit notions of sustainability, but is largely involved in a process which involves difficult political decisions (Dudley *et al.*, 1992). The lack of integration between departments dealing with agriculture and land reform does not facilitate the incorporation of sustainable land use promotion into the land reform process either, despite the fact that the departments are under one minister. In view of this assertion, many authors have coupled the need for sustainable agriculture to broader land and agrarian reform programmes, both globally and in South Africa (Dudley, 1992; Cliffe, 1994; Lebert, 1994; Cooper *et al.*, 1996; Cousins, 1996; Marcus *et al.*, 1996). Strategies for promoting sustainable agriculture, such as policy development, land use planning, networking and monitoring, therefore require further investigation. In the following chapter, I will evaluate the sustainable agriculture movement, its origin, character and place in the South African agrarian economy. Furthermore, I will develop a basic thesis for the creation of sustainable agriculture-based livelihoods in the land reform programme.

# - CHAPTER THREE -

# GREENING LAND AND AGRARIAN REFORM: THE ORIGIN, PRACTICE AND PROMOTION OF SUSTAINABLE AGRICULTURE

> ...there needs to be a greater, or at least a more conscious link between two agricultural reform movements...the organic or biological farming movement, and the many groups and individuals working towards land reform, particularly with respect to farmland.
>
> (Dudley, 1992, 1)

The sustainable agriculture movement, incorporating a range of approaches, evolved largely from a critique of conventional agriculture which is characterised by a high level of mechanisation, specialisation and the intensive use of agrochemicals (pesticides and fertilisers). Much criticism has been levelled at conventional agriculture due to the perceived lack of environmental sustainability and the negative social, political and economic effects thereof. This chapter will explore the origin, principles, characteristics and scope of sustainable agricultural development in contributing towards land and agrarian reform in South Africa. Dudley's (1992) assertion has been echoed by many researchers in South Africa, thus providing scope for the creation of sustainable farming systems, within the current transformative land reform framework.

For the last 130 years, agriculture has largely used chemically-oriented processes in place of biological processes. Though it appears to have contributed towards an efficient and productive agriculture, most of the high yields have been achieved in richer countries, while the effects on human and environmental health have been 'discounted' into the future. A reliance on inputs such as fertilisers, high yielding varieties of seeds, pesticides and mechanisation has moulded modern agriculture into an expensive 'business'. The negative effects of conventional agriculture such as soil erosion, inefficient energy and resource use, poor food quality and production limitations are therefore never costed when accounting for the 'success' of conventional agriculture (Hodges, 1982). Though statistics indicate that global food production is sufficient to feed the current population, hunger and famine still occur (Pretty, 1997). This illustrates that issues, such as unequal access to and distribution of agricultural resources have been neglected.

The literature on sustainable agriculture is characterised by a wide range of approaches indicative of the continuum which exists between ecocentric and anthropocentric approaches. Authors, writing on sustainable agriculture, have approached this concept from economic, ecological, social justice and ethical stances. Land reform, farmer participation and farming systems research are also three important concepts which have linked the sustainable agriculture movement with other social movements, such as peasant movements. In South Africa, writing on sustainable agriculture increased in tandem with the debate around sustainable development and land reform, especially after the historic political changes of 1990. However, widespread adoption of practical methods have been limited due to a lack of practical examples, a negative perception of the viability of sustainable agriculture, and a lack of concomitant support services (Urquhart, 1997). The dominance of the conventional society-agriculture dialectic has also influenced the uptake of sustainable agriculture as technocratic, science-based solutions are seen to provide the totality of what constitutes good agriculture. The foundations of this relationship is described in Section 3.1.

## 3.1. AGRICULTURE- SOCIETY INTERACTIONS

> The history of modern agriculture is a history of devaluation of farming, loss of control of farming activities by farmers, loss of rural societies, separation of people and nature, plundering and degradation of the conditions of production by agribusiness, and the penetration of capital primarily through mechanisation and chemicalisation. Equally important have been the internationalisation of agriculture and its place in the international division of labor.
>
> (Perfecto, 1995, 173)

Agriculture marked the transition of human groups as controllers of nature, rather than integral components of natural ecosystems and was "undoubtedly a major watershed in both cultural and environmental history" (Mannion, 1995, 4). From hunter-gatherers to pastoralists, early civilisations located mainly in the Near East, Mesoamerica and Northern Andes, initiated an agrarian revolution through the manipulation of energy flows and biogeochemical cycles to produce food, fibre and other commodities (Mannion, 1995). Today we find diverse patterns of agricultural production, ranging from livestock to arable production, which have emerged since the practice of sedentary cultivation, set at between 7000 - 10 000 before present (Barrow, 1995). The evolution of agriculture is strongly tied to the prevailing socio-

political and economic systems, for example the prevalence of plantation agriculture during the colonial period. The role of technological changes such as mechanisation, the use of agrochemicals (chemical fertilisers and pesticides) and irrigation technologies have played an important role in shaping conventional agriculture. The links which exist between technology as an instrument of power in agricultural development, and its use by capitalist interests has been well documented (Shiva, 1991; Kloppenburg and Burrows, 1996).

Development thinking, be it capitalist or socialist, has had a marked influence on the nature and form of human-environment interactions. Within agriculture, development has proceeded in a direction in which productivity, growth and profit have been regarded as the primary indicators of well-being. A deep dissatisfaction with this approach has been one of the primary unifying themes of the various proponents of sustainable agriculture. Furze (1992) has stated that it is imperative to understand the notion of development in order to gain an understanding of the relationship between individuals, society and nature. For example, if development is equated with 'industrial capitalism', a specific set of social and economic relationships will evolve. In his writings on environmental management and capitalist agriculture, he states that "so many causes of the environmental crisis is structural and requires analysis which includes social, economic and political factors" (Furze, 1992, 79).

The social, political and economic processes operating in society have therefore shaped modern agricultural development. Modern agriculture is generally of three types according to Pretty (1995a) - conventional high yielding and heavy-input agriculture; Green revolution agriculture; and traditional agriculture which utilises little or no technological inputs. In discussing the development of conventional and Green revolution agriculture, one discovers that it is largely science-based and high yielding, but that benefits have been poorly distributed. This could be due to the variable availability and high cost of the required inputs such as farm machinery, hybrid seeds and irrigation technologies. Green revolution agriculture, modelled on the conventional agricultural model of the First World, has introduced technological innovations, such as pesticides, high yielding varieties of crops and mechanisation into the poorer countries of the world. This has led to environmental pollution, loss of genetic resources and a decrease in soil fertility, much as one would find with conventional agriculture (Aihoon and Kirsten, 1994).

Subsistence agriculture, still widely practised in many poor countries, has undergone a marked change under conditions of increased population density and political and economic changes in the rural environments. Increased soil erosion, decrease in the fallow period, deforestation and overgrazing are frequently occurring problems (Cooper, 1991c; Aihoon and Kirsten, 1994). While subsistence agriculture has been regarded by some as being environmentally destructive and unable of achieving food security (Pretty, 1995a), current thinking has highlighted the negative effects of the political and economic transformation, based on Western agricultural models, for subsistence growers (Shiva, 1991). Socio-economic processes, which accompanied agricultural transformation programmes in the poorer countries of the world, thus had an impact on subsistence or traditional agriculture as well. Its effect has largely been negative: traditional agriculture was undermined due to a lack of support services (credit, marketing, agricultural inputs); access to land was denied, and the view that traditional agriculture is backward, has been perpetuated. Despite the growing evidence indicating the agrodiversity and dynamism of a large number of traditional cultivators, this view has persisted (Brookfield and Padoch, 1994).

Importantly, one realises that both the subsistence and conventional sides of agriculture contribute towards environmental degradation. Despite the negative effects of conventional agriculture, it is still put forward as the epitome of 'successful' agriculture. However, many authors have unearthed the underpinnings of this prevailing view which lies in the relationship between power, science and agricultural research and development.

### 3.1.1. Science in service: truth talking to power[2]

Though chemically-oriented, intensive agriculture was practised since the late 1800s, a significant period in its development has been the 1960s, also known as the time of 'scientific euphoria'. One of the only conservation-oriented themes in agriculture which survived this period of intensive scientific research and development, was soil erosion. However, even with soil conservation programmes, the main focus was on correction and not prevention; top-down approaches and enforced conservation measures (Blaikie, 1985). 'Betterment' planning schemes in

[2] This term was used by Blaikie in a seminar on land degradation which was held in the Department of Economics, University of Cape Town (Blaikie, 1997).

the former homelands of South Africa are an example of such technocratic, managerial approaches to agricultural conservation (Durning. 1990). The 'successes' of conventional agriculture in the United States and in Britain, such as increasing yields, were transferred to the developing countries in the form of Green revolution technologies. These included increased pesticide use, irrigation and mechanisation (Harwood, 1991). Not only were these technologies developed ex-situ, but they were inappropriate to the socio-economic contexts of most developing countries which were characterised by high unemployment and low availability of capital. The roots of the current agrarian crisis in the developing world can be traced to the large-scale adoption of intensive agricultural practices, transferred through the Green Revolution. In the example illustrated below, Shiva traces the roots of the violence in the Punjab province (India) to the ecological and political demands of the Green Revolution.

Shiva (1991) has stated that the Green Revolution could be seen as an experiment in development and agricultural transformation. It was initiated in the post-independence period in the developing world during which land reform programmes were prioritised on many national agendas, and agrarian unrest was common. Green Revolution technologies attempted to solve these socio-political problems by introducing agricultural technologies, thus bypassing inequality and environmental sustainability. These technologies replaced crop and varietal diversity through the introduction of a narrow genetic base, increased water resource use and chemical inputs, as well as the transformation of social and political relationships. To this end, Shiva notes that science was "assigned a privileged epistemological position of being socially and politically neutral" (Shiva, 1991, 21). Scientific research could offer 'technofixes' for social and economic problems, but delinked itself from the social and political problems it created, such as new inequalities and scarcities. Shiva is not alone in her critique of the role of science in providing an objective reality or 'true' knowledge, disregarding the values and political agendas of investigators - Pretty (1995a) and Kloppenburg and Burrows (1996) have raised similar concerns. Despite this critique, the conventional agricultural approach continues to be promoted. Thus, while

> scientists are concerned about maintaining their professional autonomy and freedom, they nonetheless succumb to social controls of powerful forces to use science in a discourse to narrate a certain political and economic reality. The requirements posed by powerful interest groups become the basis of a fundamental critique of scientific enquiry and technology; they are not neutral instruments seperable from the context in which they occur.
>
> (Bryant, 1995a, 15-6)

In South Africa, the interests of white commercial farmers have been protected by protectionist measures for a period close to 400 years. In Chapter Two, the history of dispossession which shaped the South African agrarian economy was described. This illustrated the development of a dual agriculture system: white commercial and black subsistence agriculture. Owing to its economic importance, the land reform programme faces enormous challenges in severing the links between commercial agriculture, political forces, and agricultural research institutions . The conciliatory nature of the land reform programme also inhibits such action. Hence, the response from the South African agricultural sector to the sustainability debate is slanted towards sustainable agricultural production via economic growth. For example Crosson and Anderson (1995), in a recent report entitled *'Achieving a sustainable agricultural system in sub-Saharan Africa'*, promote the adoption of more productive technologies and practices such as crop varieties, pesticides, herbicides and mechanisation as the route for successful 'sustainable' agricultural development in sub-Saharan Africa. Though some indication is provided of the environmental costs of this approach, 'successful' agriculture is seen as focusing on productivity, liberalising input and product markets, limiting government interference in property rights and tenure issues, and transforming educational institutions (Crosson and Anderson, 1995). This neo-liberal approach to agriculture is unlikely to address the concerns of all farmers in sub-Saharan Africa, and will continue to favour the commercial agriculture over the household food security needs of the region's farmers. Recommendations for sustainable agricultural development should be steeped in the context for which it is being developed, and should ensure that "the social and political dimensions of sustainable agriculture...[receive] the same serious analysis and attention that sustainable agriculture research and technology do" (Buttel and Shulman, 1997, 236).

### *3.1.2. The debate in the 1990s*

The proponents of sustainable agriculture have often been highly critical of

conventional agriculture and promote a more holistic approach which addresses issues like the maintenance of soil fertility, water conservation and the reduction of pesticide use. However, alternative agriculturists have also been criticised for re-inforcing the dominant philosophy by focusing on input-substitution rather than fundamental agrarian restructuring. Researchers have expressed a concern that the notion of 'sustainability' will only be an add-on to conventional practices, leading to superficial change. Instead, sustainable agriculture research should be tackling the underlying forces which are intrinsic to the market economy and broadening the vision of sustainable agriculture (Altieri, 1993; Thompson, 1995; Rosset and Altieri, 1997). Rosset and Altieri (1997) have provided a critique of many sustainable agriculture approaches, which they say are characterised by an input substitution modus operandi and an inability to address the root causes of unsustainability. Their premise is that the socio-economic context of modern agriculture has shaped its development, for example labour-intensive practices were abandoned in Britain and the USA due to increased urbanisation, mechanisation and rural-urban migration. The transfer of these agricultural systems to the developing world in which chronic unemployment existed, spelt disaster. However, the majority of sustainable agriculture proponents still look at the externalities of conventional agriculture, bypassing opportunities to focus on changing peoples values and institutions, and finding new ways of defining how natural resources are used, and its benefits distributed (Korten, 1993).

This focus on specific issues has its downfall, and often result in a series of claims and counter-claims. Nevertheless, these conflicting results and opinions gained through scientific methods of enquiry illustrates the *uncertainty* of knowledge gained through the application of scientific analysis and experimentation. The debate on biotechnology illustrates how a critique can be issue-specific and still incorporate a broader analysis of the root causes of unsustainability. Some authors regard biotechnology as promising and an essential component of sustainable agriculture (Crosson, 1992), while others are more cautious in their deliberations (Cooper, 1990; Pretty, 1995a). Many of the opponents of biotechnology are vehement in their criticism, regarding it as the newest technological fix, aimed at further entrenching a reliance on off-farm inputs. Though the debate on biotechnology is not new, it has now been linked to sustainable agriculture. It has been stated that increased productivity could be achieved through genetic engineering which includes research into herbicide-tolerance crop research

(entrenching the chemical approach); pest-resistance; nitrogen-fixation and modelling or projecting the effects of introducing genetically engineered organisms (Hindmarsh, 1992).

Critics, such as Kloppenburg and Burrows (1996) provide a strong case for the inherent incompatibility of biotechnology with sustainable agriculture. They state that biotechnology, in many instances, is inappropriate to human needs; it is expensive; it has not produced viable products thus far; it directs research funds away from alternative agriculture; and universities appear to fulfil the role of 'servants' to agribusinesses. There is also large-scale uncertainty as to the risk of introducing genetically altered organisms into ecosystems (Kloppenburg and Burrows, 1996). Ethical considerations which include patenting, ownership of genetic information and the commodification of humans and other species are also being raised. Hindmarsh (1992) states that to agribusinesses, biotechnology has great commercial value and presents an opportunity for overcoming environmental limits. It therefore represents a newer, more expensive agribusiness package. Biotechnology, according to many of its critics, is characterised by lack of fundamental change, it is dominated by and caters for the needs of industry, indicating the inseparability of technology and social power (Kloppenburg and Burrows, 1996).

Despite the complexity of the agriculture-environment-society relationship, sustainable agricultural approaches present many challenges for policy formulation and agricultural restructuring in the 1990s (Dahlberg, 1991). Importantly, sustainable agriculture proponents have highlighted the negative effects of conventional agriculture in a very convincing manner. In formulating an alternative approach to land management in South Africa, it is crucial to draw on sustainable agriculture debates in constructing a case for sustainable agriculture.

## 3.2. A CASE FOR SUSTAINABLE AGRICULTURE

Criticisms of conventional agriculture stem from three main angles - environmental, socio-cultural, and political economy perspectives. However, the majority of criticisms have been on environmental grounds, especially around the issues of pesticide use and soil erosion. For example, the first synthetic pesticides were used in

1940s and led to increased yields in much of the developed world. By the 1960s, critics like Rachel Carson started to highlight the negative impact of pesticides on human health and the environment (van den Werf, 1996). Pesticides disperse into the environment through water sources, both surface and ground, soil and air. Though there is currently an increase in reducing pesticide use, especially through methods such as Integrated Pest Management (IPM), the political will has often not been forthcoming. Examples from the USA and Indonesia indicate the need for a holistic approach to pesticide reduction, which includes much more than market and legal reforms (Pimentel *et al.*, 1991; Thiers, 1997).

Pimentel *et al.* (1991) examine the environmental and economic effects of reducing pesticide use by 50% in the USA and conclude that this could be achieved without reducing crop yields. In addition, they state that many authors have indicated that the benefits of pesticides to crop yields do not reflect the negative effect on the environment and human health. Increases in pesticide use have not been accompanied by a decline in crop losses, in fact crop losses increased in some instances. The authors recommend increased monitoring of pesticide use, leading to more efficient pest control. Though it is feasible to reduce pesticide use by 50% in the USA, it is important that the public accept reduction in the appearance of fruit and vegetables. Pesticide reduction therefore requires a combined re-education of farmers and the public; policy revisions; and research into alternative pest controls (Pimentel *et al.*, 1991). Thiers (1997) traces the reasons for the successful pesticide reduction policy in Indonesia's wet rice production. He finds that despite a near completion of the Green Revolution extension campaign in the early 1980s, major pest outbreaks occurred in 1985-86. This formed the impetus for change as 57 pesticides were banned, an IPM policy was instituted and subsidisation for pesticides was cut by the government. However, teaching new pest management skills through top-down approaches proved very difficult. IPM farmer field schools were initiated, relying on newly trained field observers, thereby excluding the local bureaucracy which might have had strong ties to the pesticide industry. These schools achieved farmer participation, broke the established hierarchical pattern of information-creation and implemented IPM at the local level (Thiers, 1997).

The pesticide example illustrates how sound research, policy development, and the political will to implement changed practices should be combined to ensure the transition to sustainable agriculture. By drawing on a series of agricultural themes,

some of the negative effects of conventional agriculture will be discussed. These will then be related to the environmental effects of agriculture in South Africa (See Chapter Two) to put forward a case for sustainable agriculture-based land reform in post-apartheid South Africa.

*Soil:* The loss of soil fertility has often been one of the main concerns of sustainable agriculture (Rodale, 1983). Virtually all sustainable agriculture approaches advocate and stress the importance of maintaining soil fertility and utilising various practices such as soil mulching, composting and the use of nitrogen-fixing crops and trees to restore nutrients to the soil (Boeringa, 1980; Pimentel *et al.*, 1989). Soil nutrient losses and the destruction of the soil profile are two of the most important negative effects of conventional agriculture. The use of pesticides, bad irrigation practices and tillage methods have led to the destruction of the soil horizon and a depletion of nutrients. In addition, nutrients which are lost in the process of cultivation are not replaced. Nutrients are leached from the soil through bad irrigation practices and ploughing which disturbs the soil profile, thus leading to soil compaction. The use or over-use of fertilisers could also lead to soil salinisation due to an overconcentration of minerals in the soil. Various soil conservation methods have been promoted, and economic incentives have been provided for soil conservation. What is clear from the literature, is that soil conservation has often been and still is the most important theme in agricultural conservation programmes. South African soils are generally poor. In addition to having a low-organic content, high levels of soil erosion have been observed and agricultural practices have impacted negatively on soil health (Schoeman and Scotney, 1987; Cooper, 1991c). This has important implications for land reform. Precautions need to be taken to ensure that the environmental catastrophe, linked to apartheid-era agricultural policies, is not replicated (Durning, 1990; Lebert, 1994).

*Water:* Agriculture consumes 87% of the world's fresh water and climate change could further alter precipitation and temperature patterns (Pimentel *et al.*, 1997). Water is said to be the most critical resource in agriculture. Irrigation could also lead to problems of salinisation and waterlogging, and consequently decreased productivity. However, many governments are subsidising water for agriculture and this undercharging often leads to inefficient use of water. Agricultural water use could be improved by increasing irrigation efficiency through conservation technologies, irrigation practices, agroforestry and intercropping (Pimentel *et al.*,

1997). The contamination of both surface and ground water through the use of pesticides has also had an impact on plant, animal and human life. In South Africa, a semi-arid country, water use for agricultural production enjoyed high levels of subsidisation in the apartheid-era. Currently, important legislative changes, relating to the subsidisation of water for agriculture, are being undertaken (Department of Water Affairs and Forestry (DWA&F), 1997). This will have important implications for land reform beneficiaries who will now have to pay for water use. A key strategy of the DWA&F, that of water conservation, has been promoted country-wide but a great deal still needs to be done to address the agricultural practices of farmers. For example, irrigation practices of Western Cape farmers have had a debilitating effect on major drainage basins in the region (Moolman and Lambrechts, 1996). There is thus an urgent need for investigating agricultural conservation practices, related to both soil and water resources.

*Plants and animals:* In addition to the impact of pesticides on vegetation, monocrop production, as witnessed in most conventional agricultural enterprises, has led to a reduction of species diversity. Genetic diversity has been lost as high yielding hybrid seeds replaced traditional cultivars (Shiva, 1991). The reduction in genetic diversity is an important aspect as hybrid seeds often do not display the resistance that many traditional cultivars have (Le Roux, 1993). Overgrazing has also had an effect on the species composition of rangelands often leading to a loss of biodiversity and a proliferation of unpalatable plant species (Archer *et al.*, 1995). Habitats for animals are increasingly being take up by the expansion of agricultural land uses, both extensive and intensive. In addition, many range management practices have been unsustainable owing to a number of reasons, related both to poor management practices and structural constraints. For example, in South Africa, enforced stock culling, the unavailability of land, and agricultural support services, severely undermined rangeland agriculture (Cousins, 1996). Another issue of importance has been the frequent administration of steroids, anti-biotics and hormones to cattle, sheep and poultry to increase growth and kill internal parasites (Kiley-Worthington, 1981). Initiatives to breed parasite resistant animals have been started by the Centre for Sustainable Agriculture in the Western Cape (Viljoen, 1995). In view of the important role of cattle in African culture, sustainable range management practices are imperative.

*Biodiversity:* Monocultural production is a key characteristic of conventional

agriculture and its effect on reducing biodiversity has been profound (Pretty, 1995a). Many traditional cultivars have been lost, and despite the fact that diverse biological systems have proven to be more stable and resilient - monoculture production persists. Many farmers practising sustainable agriculture may not achieve the yields of their counterparts, but during difficult climatic periods their yields have not dropped as dramatically as those of conventional farmers (Stanhill, 1990). Erasmus and Stafford (1995) say that genetic diversity incorporates both a high species diversity and a broad genetic pool which forms a stabilising factor, enabling the system to adapt and still be productive under conditions of environmental stress. They advocate the establishment of seed banks which store the genetic material of various species (Erasmus and Stafford, 1995). Biodiversity conservation appears to be in contradiction with much of the monoculture, single species agriculture practised today. Thus, integrated agriculture, in which both plants and animals fulfil important functions, needs to be investigated. A number of sustainable agriculture approaches, such as permaculture, promotes the integration of plants and animals (Nel, 1993).

*Economy:* The transfer of conventional agricultural systems require economic restructuring as capital is required for inputs such as water, machinery, seeds and pesticide inputs. Often, in developing countries where large-scale unemployment exists, Green Revolution agriculture has had little success. Only those who could afford the inputs, such as rich landowners, were able to farm commercially. In the USA, the decline of the family farm and the prevailing attitude of "get big or get out" also illustrates that the economic demands of conventional agriculture have increased. At a larger scale, the debt burden of many developing countries, struggling to maintain a cash-crop oriented agricultural sector, has led to a decrease in domestic production for food security - leading to a reliance on food importation. By concentrating on cash crops, little financial resources are available to support small-scale or subsistence agriculture. The link between poverty and the environment proves to be more complex than the degradation of land through lack of knowledge - it is about eking out a livelihood from marginal land, with little inputs and virtually no financial backing. The existence of a dual agriculture in South Africa: white commercial and black subsistence agriculture, does not negate the fact that negative environmental impacts can be observed in both these approaches (Aihoon and Kirsten , 1994). However, much of the negative impacts associated with black subsistence agriculture can be traced to the repressive

apartheid-era policies which consciously undermined the creation of an African peasantry (Bundy, 1988). Land reform in South Africa incorporates both subsistence and commercial agriculture and needs to be accompanied by shifts in agricultural support service provision, from large-scale commercial to small and medium-sized farms. Land reform will also require a re-orientation of economic policy to facilitate the development of small-scale agriculture among previously marginalised groups.

*Social systems:* Conventional agriculture was born in a climate in which labour was regarded as a limiting factor whose usefulness should be cut down as far as possible. The labour absorptive capacity of conventional agriculture is therefore limited and this has had a devastating effect on agriculture in the developing world especially. The lack of understanding of traditional agricultural knowledge, institutional arrangements and cultural beliefs have also led to inappropriate agricultural development (Brookfield and Padoch, 1994). Not only have many development projects been inappropriate, but they have eroded the traditional social systems and undermined the resilience of many communities, leaving them more vulnerable than prior to intervention. This can be witnessed in the former homelands in South Africa (Durning, 1990). While South Africa displays a diverse range of tenure relations, from wage labour to communal tenure, segregationist and oppressive land laws alienated large numbers of people from the land (See Chapter Two). Much will have to be done to reconstruct the South African landscape - land reform is a beginning. Moreover, an incorporation of sustainable agriculture could greatly enrich the land reform programme in South Africa..

The sustainable agriculture movement represents a response to societal crises, such as the erosion of agrarian societies, increased vulnerability to natural hazards, such as droughts and floods, and pollution of water and soil resources. The multiple facades which characterise the sustainable agriculture movement, in a similar vein to that of the environmental movement (O'Riordan, 1981), has been criticised for its plurality. As I am advocating the adoption of sustainable agriculture approaches over conventional agriculture as the premise for land reform in South Africa, a critical review of the sustainable agriculture movement is required.

## 3.3. HISTORY AND PHILOSOPHY OF THE SUSTAINABLE AGRICULTURE MOVEMENT

Sustainable agriculture displays divergent meanings, often depending on the 'lens' through which the concept is viewed. There has been agreement that sustainable agricultural development could lead to more comprehensive societal benefits, but support for sustainable agriculture has been very fragmented. Hoag *et al.* (1994) have stated that the lack of a unified philosophical and ideological basis has led to sustainable agriculture meaning all things to all people. In particular, they state that there has been little questioning of social values which place too much importance on profit and production or on the resistance from the agricultural establishment towards change. In response to this definitional confusion, many proponents of sustainable agriculture have advocated an issue-based approach, such as focusing on decreasing soil erosion or reducing pesticide use (Hoag *et al.*, 1994). However, this issue-based or input-substitution approach could detract heavily from addressing the social, economic and political structures which underpin the problems of modern agriculture (Altieri, 1993). As Altieri further states, an approach which only replaces unsustainable chemical inputs with biological inputs is just another 'technofix' which does not address many issues of importance in the developing world, such as increasing tenure security, maintaining cultural identity and protecting the land (Altieri, 1993). By examining the history and philosophical roots of the sustainable agriculture movement, it can be seen that though consensus does not always exist, the movement is underwritten by similar motivations to provide alternative imaginaries of the society-agriculture interface.

Sustainable agriculture, as a 'self-aware' movement is not very old, though some of the concepts date back to the prehistoric age (Merrill, 1983). This includes a focus on the harmonious interaction with nature and the sense of spirituality attached to interactions with the environment. Subsequent civilisations invented many of the technologies which we use today and laid the basis for an approach in which humanity would dominate nature. By the late 1800s, also known as the modern period, this relationship of domination had been established. The advent of the scientific and industrial revolutions enabled the application of science and technology to agriculture. Though critics of this scientific approach were present in the late 1800s, they were limited and were composed of individuals who felt that agriculture should be governed by biology and ecology rather than chemistry and technology. These early proponents of sustainable agriculture focused mainly on the

merits of increasing soil fertility (Lyons and Lombaard, 1992). The events believed to have given rise to criticisms against conventional agriculture, include the serious soil erosion witnessed in the USA from the 1920s (Dust Bowl), and the establishment of the links between agriculture and the declining health among humans and other organisms (Merrill, 1983). The Dust Bowl period led to increased research on soil erosion, both within the USA as well as other countries, for example South Africa (Beinart and Coates, 1995). From the 1950s onward, a period known as the Scientific Revolution, was characterised by widespread acceptance of various agrochemicals, and the widespread application of conventional agriculture.

Individual research efforts into alternative agriculture was being undertaken, but it was only with events like Rachel Carson's book, *The Silent Spring*, (Carson, 1962), (a seminal work which highlighted the effects of pesticides on wildlife) and the energy crisis of the eighties that sustainable agriculture was practised more widely at the farm level (Merrill, 1983). Coupled to the environmental effects of agriculture, observed as early as the late nineteenth century, the emergence of the environmental movement in the USA during the 1970s, focused attention on alternative approaches to conventional agriculture. The alternative agriculture movement therefore arose out of an observation of natural phenomenon and a reaction to increasing mechanisation and specialisation in agriculture. It is characterised by "eclecticism and interdisciplinarity" (Merrill, 1983, 205). Yet, the sustainable agriculture focus has not featured prominently in the South African environmental movement. Aside from the Poison Working Group of the Endangered Wildlife Trust, an environmental NGO, which highlights the effect of agricultural pesticide use on environment and wildlife in South Africa (Poison Working Group, 1998), the South African environmental movement has not incorporated agricultural conservation issues into their programme. Much still needs to be done to link the agrarian to the environmental question - the environmental justice movement represents one possible avenue of achieving this.

According to Buttel (1993), the momentum of the sustainable agriculture movement has slowed down. This, he said was because global environmental activism did not focus on agriculture; the scientific backing for global environmental change had decreased; and the United Nations Conference on Environment and Development, held in Rio de Janeiro in 1992, only served to highlight the tensions between the North and South. However, the proponents of sustainable agriculture have achieved

some major successes. For example, many European countries test imported produce for pesticide residues, while the market for organically produced food has increased. There is not much data available to compare the production levels of sustainable agricultural enterprises with that of conventional farms. However, where data is available, sustainable agriculture compares favourably (Stanhill, 1990). It should be borne in mind that products produced organically or in an environmentally sound manner, are currently undergoing certification by a number of regulatory bodies (Klinkenborg, 1995; Brown, 1996). In addition, organically-grown products often command higher prices than conventionally-grown produce (*The Economist*, 1985).

Country and regional efforts include the formation of networks between alternative farmers (Alders *et al.*, 1993), and the landcare initiatives of Australia and New Zealand which emphasises the importance of farmer participation in agricultural land management (Curtis and de Lacy, 1996). In addition, a range of workshops and meetings on sustainable agriculture in Africa, have been held (McDougall, 1987, Jacobs, 1997). Closer to home, the International Institute for Environment and Development's (IIED) worldwide research programme entitled, *'Policies that work for sustainable agriculture and regenerated rural economies'*, has selected South Africa as one of the case study countries (IIED, 1997). At the local level, many non-governmental organisations are engaged with local communities in participatory, ecological agriculture such as permaculture, agroforestry and low-input sustainable agriculture, while the adoption of IPM by commercial farmers has also been an important step in popularising notions of environmental sustainability (Wellard and Copestake, 1993).

Thus, there appears to be a resurgence of interest in sustainable agriculture. Though efforts are mainly directed at small-scale or subsistence agriculture, the sustainable agriculture movement faces the challenge of demonstrating the viability of alternative approaches to the practitioners of conventional agriculture. An advisor to a number of alternative farmers, of whom some are farming commercially, has stated that the transition to sustainable agriculture is 90% psychological and 10% technological (Klinkenborg, 1995). Though the impetus for the sustainable agriculture movement was formalised in countries such as the USA and Europe, it is increasingly being linked to agrarian issues in the poorer countries of the world (Shiva, 1991). The distinguishing characteristics of the sustainable agriculture

movements lies in the philosophies, principles and attitudes of proponents (Merrill, 1983).

Many researchers who have written on sustainable agriculture, have noted the difficulties in arising at a universal definition of sustainable agriculture (Harwood, 1991; Helmers and Hoag, 1993; Pretty, 1995a). Though some have seen this as an obstacle (Helmers and Hoag, 1993), the variety of approaches to sustainable agriculture, characterised by a diversity of terms, reflects the vitality of the movement in its search for alternatives to conventional agriculture (Dahlberg, 1991). The many rationales, appeals and strategies of the sustainable agriculture movement "is an insurance policy against possible failures or limitations of any one approach" (Buttel, 1993, 185). Dahlberg further states that though the approaches have different foci, they appear to be in agreement that industrial agriculture, as currently practised, is unsustainable in the long term (Dahlberg, 1991).

Some of the underlying philosophies of sustainable agriculturists include a rejection of the Cartesian duality of matter and spirit; the promotion of holism and interrelatedness; a rejection of the supremacy of science; the promotion of the notion of a partnership between nature and human beings; and advocacy for a strong rural economy (Merrill, 1983). The various definitions of sustainable agriculture contains the assumptions and reflect the ideologies and values of the subscriber. It also indicates the multitude of conditions that may be conducive to achieving sustainable agriculture (Reeve, 1992).

Authors have noted central issues around which the various approaches have arisen. These include: equity, economic viability, ethics and environmental sustainability (See Table 3.1. for the basic components of sustainable agriculture). For example, some proponents of sustainable agriculture focus greatly on the ethics of agriculture, such as the reconstruction of agriculture on the concepts of truth, beauty and joyfullness (Auerbach, 1993), while other methods, particularly the earlier methods of the sustainable agriculture movement, such as the Howard-Balfour system, focused largely on principles of soil fertility (Boeringa, 1980).

| MAIN COMPONENTS OF SUSTAINABLE AGRICULTURE | |
|---|---|
| economics: | achieving effectivity, stability and justice in production, use, marketing and the distribution of food, fibre, energy and wealth; |
| politics: | meeting the needs of society such as legitimacy, authority, responsibility, influence and participation; |
| aesthetics: | appreciating nature; |
| ethics: | appreciating the various value systems within agriculture, as well as striving towards peace, integrity, goodwill and stewardship; |
| science: | accumulating information, knowledge, insight, understanding and wisdom; |
| and holism: | developing a dynamic framework in which the interconnectedness of agricultural systems can be understood. |

Table 3.1: A conceptual framework of sustainable agriculture (Source: Lyons and Lombaard, 1992)

Though the proponents of sustainable agriculture are not always in agreement over specific farming practices, or on their various foci points, there is sufficient coherence in basic attitudes and ideas to treat the movement as a whole (Merrill, 1983). The various approaches are characterised by a philosophy and a method of farming which "represents new ways of thinking in agriculture" (Merrill, 1983, 186). Primary disagreements are not between names, but between purists and realists - representing two ends of a continuum in sustainable agriculture. It is often the realists who have greater 'acceptability' with conventional farmers as the purists are usually part-time or small/medium-scale farmers whose ideas and practices have alienated agricultural researchers and conventional farmers (Merrill, 1983). The continuum between the purists and realist sustainable agricultural approaches, emphasise the different values, priorities and goals of this movement, reflected in the myriad of agricultural practices employed by sustainable agriculture practitioners.

## 3.4. SUSTAINABLE AGRICULTURE IN PRACTICE

Though it would be difficult to achieve all the goals of sustainable agriculture, they could be met to varying degrees (Auerbach, 1990), often requiring trade-offs and prioritisation. Though there is widespread consensus on the fact that agriculture should be ecologically sound, there is much less agreement on issues of economic viability, equity and social justice (Botha and Ikerd, 1995). Despite the eclecticism of the sustainable agriculture movement, it is underpinned by basic principles. Various authors have developed the main principles of sustainable agriculture, which include a reliance on on-farm resources and self-sustainability; soil conservation; diversification to maintain biological diversity; community involvement; promoting co-operation between communities and agricultural extension officers; intergenerational obligation; the size of production units; and the temporal dimension of agricultural development (Kiley-Worthington, 1981; Merrill, 1983; Crosson, 1992; Auerbach, 1993; Environment and Development Agency Trust, 1995; Gibbon *et al.*, 1995; Pretty, 1995a). Issues such as the conservation of natural resources are often prioritised by sustainable agriculturists. However, agricultural sustainability is much broader than conservation programmes and incorporates considerations of economic viability, equity and justice. Though sustainable agriculture is a contested concept, it offers an alternative to the ecocentric/anthropocentric dichotomy and promises to "promote philosophical unity" (Thompson, 1995, 149).

The fact that sustainable agriculture does not prescribe a concrete set of technologies, practices or policies, broadens the movement to incorporate a range of approaches (Pretty, 1997). However, it is important that sustainable agriculture is not reduced to input-substitution. Instead, it should represent a shift in agricultural development to promote the efficient and non-destructive use of available human and physical resources (Pretty, 1997). A wide spectrum of goals and objectives for sustainable agriculture therefore exist, which, according to Pretty (1997) incorporate a thorough integration of natural processes into agricultural production processes, thus ensuring profitable and efficient production; a minimisation of the use of those external and non-renewable inputs with the potential to damage the environment or harm the health of farmers; and the full participation of farmers and other rural people in all processes of problem analysis, and technology development, adaptation and extension, leading to an increase in self-reliance

amongst farmers and rural communities. Greater productive use of local knowledge and practices, including innovative approaches not yet fully understood by scientists or widely adopted by farmers; and the enhancement of wildlife and other public goods of the countryside, are also important goals (Pretty, 1997).

These goals are often found in the range of approaches which are grouped under sustainable agriculture. In addition to the approaches outlined in Table 3.2., there are numerous conservation and farming practices which have been promoted as ways of achieving sustainable agriculture namely, agroforestry (Erskine, 1991), ethnobotany, sustainable range management (Cousins, 1996), catchment management (Auerbach, 1995; Kruger *et al.*, 1996; Versveld *et al.*, 1997), conservation tillage (Viljoen, 1992) and integrated nutrient conservation. Importantly, many of the proponents of these approaches have cautioned against the applicability of one approach in all contexts (Kiley-Worthington, 1981). The various approaches emphasise different issues and have strengths and weaknesses. Furze (1992), Gibbon *et al.* (1995) and Rosset and Altieri (1997) have criticised some of the sustainable agricultural approaches for failing to take into account the structural issues underpinning conventional agriculture's dominance. Furze (1992) states that although alternative approaches, such as state socialism and populism have been put forward, both have failed to tackle the problem in a holistic manner. State socialism focused on changing the relationship between individuals and the production process, without addressing the society-nature relationship, whereas populism focused on communal social units but did not address wider structural change (Furze, 1992). Furthermore, he recommends the potential of a red/green alliance in which the structural nature of social relations could be understood through a critique of the existing agrarian social relations of a capitalist mode of agriculture (Furze, 1992). Sustainable agriculture approaches are inherently radical departures from the science-based and technological agriculture, consisting of a loose set of strategies which are aimed at utilising energy efficiently. Alternative agriculturists should therefore broaden their perspectives in order to assess sustainability above the level of biological and physical efficiency, as recommended by various authors.

| APPROACH | CHARACTERISTIC FEATURES |
|---|---|
| Humus Farming | early approaches which focused on the utilisation of manure to maintain soil fertility |
| Biodynamic Farming | anthroposophical approach which considers cosmic and terrestrial forces in determining planting times |
| Organic Farming/ Agriculture | no use of synthetic fertilisers and agrochemicals |
| Natural Farming | no utilisation of inputs |
| Regenerated Agriculture | use of perennial crops, emphasise regenerative capacity of nature |
| Ecological Agriculture | on-farm processing and manufacturing, maximise net input, biological approach, independence from government and agribusiness |
| Biological Agriculture | self-sustaining, adhere to biological principles to build soil fertility, control pests, diseases and weeds |
| Low-External- Input Sustainable Agriculture | on-farm resources, management practices, diversified knowledge |
| Agro-ecology | complex systems thinking |
| Permaculture | holistic system of land use development, self-sustaining |

Table 3.2.: Approaches toward sustainable agriculture

Worldwide research has been conducted on sustainable agriculture research, although this interest has not been accompanied by widespread adoption of the practices. For example, Daberkow and Reichelfelder (1988) examined the emergence of low-input agriculture (LIA) in the USA and found that despite the existence of research indicating the comparative productivity of LIA methods, there is still an increase in the purchase of inputs and in the use of agrochemicals. This has been attributed to resistance by the forces shaping current input use, such as commodity programmes in the USA (Daberkow and Reichelfelder, 1988), as well as the economic forces which dominate research (Helmers and Hoag, 1993). There are thus constraints to the adoption of sustainable agriculture. One of the major constraints to the adoption of sustainable agriculture is the fact that farmer support services are provided by the same companies which manufacture inputs such as

pesticides and fertilisers (Cooper, 1991b). Some critics have ventured as far as stating that the research agendas of universities are 'controlled' or dictated by the major agrochemical companies. Others include inappropriate research foci e.g. focus on issues of sustainability, rather than on the promotion of sustainable agriculture; powerlessness in the face of economic, political and social structures at the global and local level; financial constraints, such as facing the risks of reduced profit; lack of data on production levels; re-education; labour-intensive bias of sustainable agriculture; and a lack of appropriate extension services and agricultural information (Daberkow and Reichelfelder, 1988; Furze, 1992; Cooper, 1991b; Helmers and Hoag, 1993).

The International Federation of Organic Agriculture Movements (IFOAM) held a conference in 1996 which indicated that converting to organic farming within the political-economic realities of the global system, presents a challenge as many poor farmers do not have the necessary savings to see them through a period of conversion (Munnik, 1996). These constraints have often been major obstacles in the evolution and spread of sustainable agriculture methods. Though many national agricultural agendas incorporate notions of agricultural sustainability, most countries are still to move beyond the level of soil erosion and water conservation programmes to a broader vision of sustainable agriculture. This vision requires that mass action, from the local to the global level, be initiated. A central argument in my thesis is the focus on the locale. What is the state of play at the local-level at present?

Many sustainable agricultural movements reflect the increased attention to community-based action through local institutions and user groups (Pretty, 1995a). Conventional agriculture is characterised by being compartmentalised in its educational approach and ignoring the passing on of knowledge from farmer to farmer. There has now been a change in thinking towards a position where farmers' knowledge, especially those who have been practising sustainable agriculture, is recognised. Enshayon *et al.* (1992) have stated that farmers knowledge is rooted in direct experience and their approaches exemplify innovation, resource conservation, soil restoration and economic viability. Local and regional farmer networks are becoming important in a variety of contexts such as the *Campesino a Campesino* in Nicaragua, the Land Stewardship Programme of the Minnesota Sustainable Farming Association and the Bolivia Agro-ecology Programme of the University of Cochamba (Alders *et al.*, 1993). Farmer networks vary considerably in

their origins, goals and organisational structure. Recently, networks of non-governmental organisations, (Peru, Ghana, Andes, Southern India) and research networks have also been established as cost-effective and powerful ways of sharing information (Alders *et al.*, 1993).

Networking has become very important in agricultural participatory research where researchers and farmers are involved in developing eco-specific and socio-economically adapted farming techniques. With specific reference to low-external-input sustainable agriculture (LEISA), Haverkort *et al.* (1993) have found that LEISA is spreading slowly because the organisations involved are small, and the socio-economic and policy environment in which farmers work is not conducive to sustainable agriculture. By strengthening development support organisations, changing policy environments, networking and empowerment, agricultural research could be relayed more effectively to resource users (Haverkort *et al.*, 1993). Strategic networking, in which temporary alliances are formed in the pursuit of shared goals could lead to the formation of alliances across social movements, moving from protest to pro-action, building citizen democracy, and promoting activism versus service provision. It could also stress how issues of local level are also manifested globally e.g. the failure of economic growth to effect a change in people's lives (Korten, 1993). A farmer-oriented, networking approach, based on the landcare programme in Australia and New Zealand, has been initiated in South Africa, forming one of the key strategies for the promotion of sustainable agriculture. The status of sustainable agriculture in South Africa is reviewed in Section 3.5..

## 3.5. SUSTAINABLE AGRICULTURE IN SOUTH AFRICA

### 3.5.1. The present status of sustainable agriculture

Most of the literature on sustainable agriculture in South Africa surfaced around the beginning of the 1990s, in conjunction with the increasing debate around sustainable development. The literature deals mainly with conceptual issues, such as the need for sustainable agriculture; critiques of commercial agriculture and Green Revolution technologies; and the effect of apartheid policies on the environment (Durning, 1990; Auerbach, 1993; Aihoon and Kirsten, 1994). More recently,

authors are dealing with the issue of land reform and the sustainable utilisation of natural resources. Most authors agree that the apartheid system has had a profound effect on the utilisation, access to, and ownership of natural resources (Durning, 1990; Lebert, 1994; Cooper *et al.*, 1996). It is clear however, that a great deal of research and fieldwork still needs to be done, and that experimentation with sustainable agriculture is required to develop and promote sustainable farming systems. Literature sources describe various approaches towards sustainable agriculture, such as permaculture, agroforestry, organic farming, biodynamic farming, water catchment management, soil and water conservation, integrated pest management and sustainable rangeland management. However, very little practical examples of these methods exist. Where they do, they often don't enjoy government support or attract the interest of commercial agriculture. As one researcher stated:

> There is a need for serious research into techniques and approaches for sustainable agriculture in South Africa...it is not yet seen as a serious alternative to conventional, chemical-based agriculture. This attitude should change and resources should be devoted to research and training in sustainable agriculture.
>
> (Cooper, 1991c, 257)

A focus on the negative impacts of conventional agriculture on the natural environment and human health characterises much of the agricultural research conducted by researchers, government departments and agricultural extension officers in South Africa. In the same year in which a symposium on wise land use, covering issues related to the research, technologies, institutions and policies required for wise land use was held (De Villiers, 1995), a booklet on sustainable agriculture was produced by the Directorate of Resource Conservation in South Africa. The booklet was aimed at explaining the implications of conservation legislation and policies for agricultural practices to resource users (Department of Agriculture, 1995b). It also provided a definition of sustainable agriculture.

> Sustainable agriculture has as its goals both the production of agricultural goods and the conservation of the resources on which these goods are produced. It represents a shift in balance towards greater concern for the environment.
>
> (Department of Agriculture, 1995b, 6)

The booklet focuses on issues of soil, water, veld and alien vegetation management and though a definition of sustainability expounds holism, this important guide focuses purely on the physical environmental aspects of sustainable agriculture - an approach which has often been adopted throughout the world. In the *White Paper*

*on Agriculture*, the Department has outlined a vision for agriculture which is a "highly efficient and economically viable market-directed farming sector, characterised by a wide range of farm sizes" (Department of Agriculture, 1995a, 2). Though the mission statement of the document alludes to the goals of equitable access to agriculture, sustainability and the need to involve farmers in decisionmaking, much has to be done to concretise these objectives. The Broadening Access to Agriculture Thrust (BATAT) was implemented "to ensure that in the medium to long term the budgetary, information and human resources within the Department of Agriculture are directed towards meeting the needs of all farmers" (Department of Agriculture, 1995c, 2). However, thought to be one of the most important initiatives of the Department, it has not integrated very well with the land reform programme, despite its relevance for many of the outgrower schemes in existence (May, 1998). Small farmer development programmes, sustainable agriculture policy initiatives and farmer-driven land management are afoot, but budget cuts, deregularisation and liberalisation of markets and services in agriculture are limiting the impact of these policies on the ground.

A number of recent research initiatives could assist in drawing together the disparate sustainable agriculture movement in South Africa (Urquhart, 1997). The completion of a literature review on sustainable agricultural services in South Africa, provides an overview of sustainable agriculture and highlights areas of future research (Erskine, 1996). Research related to integrated pest management, in view of its adoption by many farmers engaged in export production, has increased (Wright, 1996; Rencken, 1997). In addition, the Pesticide Policy Project, based in the Department of Community Health at the University of Cape Town, held a workshop in which various issues related to health, safety, the environment, public awareness and policy reform, were discussed (Pesticide Policy Project, 1997). Earlier research on the effect of pesticide exposure on the health of farm workers has also been undertaken in the Department (London *et al.*, 1994; London and Myers, 1995). Besides this broad focus on issues such as soil conservation and pesticides, two areas of research related mainly to sustainable land use have come to the fore: local-level involvement in environmental decisionmaking and planning processes and the incorporation of environmental considerations in the land reform programme.

Networking between farmers, researchers and extension officers has been presented

as an important avenue through which sustainable agricultural practices could be presented to resource users (Nouwers, 1995). The development of the Landcare South Africa initiative in which a conservation ethic could be promoted through community-based land management groups, will be loosely modelled on the principles of the Australia and New Zealand landcare initiatives (Landcare South Africa, 1997). This heralds the change in thinking at the institutional level, motioning a new focus on community-based initiatives and farmer participation. A number of NGOs are engaged in providing support for farmers, for example researchers from the Farmer's Support Group adopt a research approach which combines farming systems research and extension (FSR&E) and participatory rural appraisal (PRA), as a way of addressing questions of participation, self reliance, technological development, on-farm research and experimentation for sustainable agriculture (Auerbach, 1995). The utilisation of sustainable agriculture practices, particularly in small-scale agriculture (organic, low-input and permaculture), is indicative of the enormous challenges facing the transfer of the philosophies and practices of sustainable agriculture. Nevertheless, the increased focus on farmer participation is likely to form one of the most important steps towards sustainable agriculture in South Africa.

The second area, pivotal to this thesis, revolves around the restructuring of property relations. A number of South African researchers have linked notions of sustainability to the current process of land reform in South Africa. Auerbach (1990) has stated that resolving issues of productivity and equity within South Africa's proposed land reform process would be very difficult, as has been the case in Zimbabwe. This tension has indeed arisen, worsened by the fact that the portfolios of agriculture and land affairs is under the auspices of one ministry. This makes the reconciliation of objectives such as agricultural sustainability and the moral justification for settling the landless, all the more difficult (Stewart, 1996). Nevertheless, many authors have coupled sustainable agriculture and the need for broader agrarian reform to the land reform debate in South Africa (Cooper, 1991c; Brand, 1992; Lebert, 1994; Cooper *et al.*, 1996; Cousins, 1996; Marcus *et al.*, 1996). Ironically, the opponents of land reform have based their arguments on the fact that land reform will impact negatively on the environment (Munnik, 1995). The various governmental departments dealing with the land reform and agricultural issues have not concretised their commitment to agricultural sustainability (Urquhart, 1997). Needless to say, the creation of sustainable farming

systems, are imperative to reduce the

> risk of increased environmental degradation...[and to ensure that] preventative and improved resource management measures...accompany the land reform programme and land reform in general.
>
> (DLA, 1997a, 23)

A report, *National survey on sustainable agriculture: South Africa*, produced for the IIED provides a summary of current trends and perceptions towards sustainable agriculture (Urquhart, 1997). The survey revealed "divergent, even contradictory, understandings of the concept of sustainable agriculture" (Urquhart, 1997, 59). While some respondents viewed commercial agriculture as sustainable, others see it as being antithetical to the notion of sustainable agriculture. There is therefore a need, not for a rigid definition, but for a common vision of sustainable agriculture in South Africa. What is clear from the survey is the fragmented nature of sustainable agriculture initiatives in South Africa and the need for a closer working relationship between sustainable agriculture proponents. There is an urgent need to reconcile the diverging perceptions, values and needs around the concept of sustainable agriculture - policy formulations, popularisation, and a champion of sustainable agriculture, is needed. South Africa is on the threshold to sustainable agriculture, but much needs to be done to ensure that sustainable agriculture moves from the conceptual to the farm level (Urquhart, 1997). As one respondent noted

> People who do support sustainable agriculture need to be very firm and committed and work hard: form a network and have days where we celebrate sustainable agriculture...We need to be stubborn, very articulate, network, intensify examples on the ground - this is very important, as you can only convince people when they can see.
>
> (Respondent in Urquhart, 1997, 58)

### 3.5.2. Creating sustainable farming systems: transforming the South African agrarian economy

Sustainable agriculture methods have been applied successfully in a number of places, with economic and cultural contexts as varied as peasant farmers in Latin America and commercial producers in North America (Faeth, 1994; Mothoa, 1994; Klinkenborg, 1995). However, it is imperative that farming practices labelled as 'sustainable' are seen to adhere to the fundamental principles of sustainable agriculture. Le Roux has mentioned a case in which a monoculture system of producing maize in the Highveld region of South Africa, known as optimum

resource utilisation, failed to address one of *the* major underlying problems of unsustainability - monoculture systems (Le Roux, 1993). One might argue that the definitional variety besetting the notion of sustainable agriculture makes it difficult to ascertain which farming practices are 'kosher' and which aren't. In my view, this definitional variety does not present a motivation for discarding the concept or labelling sustainable agriculture as unattainable - the unifying theme of this broad movement is a multi-dimensional concern with the negative environmental, socio-economic and political problems associated with conventional agriculture. I would thus motivate that the broad principles and not one definition *per se*, guide sustainable agricultural development. These sustainable agriculture principles would include decreased dependency on external inputs, adopting a systems approach to agriculture, involving farmers in technological development, planning and decisionmaking and re-evaluating the ethical aspects of natural resource utilisation. The role of certification boards, which are already in existence, could play an important role in ensuring that products marketed as organic, environmentally-friendly or sustainable, are indeed so (Klinkenborg, 1995).

The transition from conventional agriculture to sustainable agriculture is therefore more of a learning process which entails not only a shift in practice, but in the values which drive societal change (Pretty, 1995b). Progress towards sustainability can therefore be achieved through a gradual shift in values and practices which ranges from conventional modern farming to agriculture in which participation, conservation, self-reliance and local economic regeneration come to the fore (Pretty, 1997). This process is outlined in Table 3.3.

This transition to sustainable agriculture will require a number of strategies aimed at highlighting the benefits of this approach, thereby guiding farmers to the level at which sustainable agriculture is completely adopted as a goal. One of the key requirements for sustainable agriculture is clear policy directives which have often been one of the main constraints to the widespread adoption of sustainable agriculture (Pretty, 1995a). It is important that policy directives for sustainable agriculture span all sectors involved in agriculture, such as the input, output, public, technological research, development and education sectors. Supporting policies could go a long way in promoting sustainable agriculture and incorporating environmental considerations into agricultural policy development (Lutz and Young, 1992).

| CREATING SUSTAINABLE FARMING SYSTEMS | |
|---|---|
| Step 0: | *Conventional modern farming* is practised, but increasingly the effects on natural resources and human health; the loss of biodiversity; and increased unemployment will begin to point out the need for improved agricultural practices. |
| Step 1: | *Improved economic and environmental efficiency* will result, for example the adoption of information-intensive technologies (slow release fertilisers, soil testing, pest and disease resistant crops) aimed at cutting costs and optimal utilisation of inputs. The goals of farming remain the same and there are no fundamental changes. |
| Step 2: | *Integration with regenerative technologies* comprises the adoption of some regenerative technologies (nitrogen-fixing crops and trees, alternative pesticides, integration of animals, soil and water conservation practices). There is therefore limited adoption of sustainable practices. |
| Step 3: | *Redesign with communities* in which agriculture is a central part of community economic and social activities, with sustainability becoming an emergent property of whole communities, catchments and landscapes. There will be a devolution of agricultural and livelihoods decisionmaking and planning processes at the local level. |

Table 3.3: A step-wise approach to convert from conventional to sustainable farming systems (Pretty, 1997)

Policies affecting sustainable agriculture should attempt to address the perceived inequality between conventional and sustainable agricultural systems through revising legislation and addressing various issues spanning the agricultural sector. However, there have been indications that despite policy changes, farmers' behaviour are not likely to be affected by legislation and policy alone (Makowski *et al.*, 1990). Though it is important that national agendas incorporate plans for sustainable agriculture, the role of farmers in prioritising their own objectives and visions for sustainable agricultural development, has recently formed an important focus of sustainable agriculture research. Sustainable agricultural development should therefore draw on a variety of approaches which above-all must be appropriate to the local conditions. The schism in agricultural thinking, which according to Beus and Dunlap (1990) clearly depicts a paradigmatic conflict in agriculture, can begin to be tackled through a range of strategies, incorporating policy formulation, participatory research and a range of support services aimed at

sustainable agricultural development (Figure 3.1.).

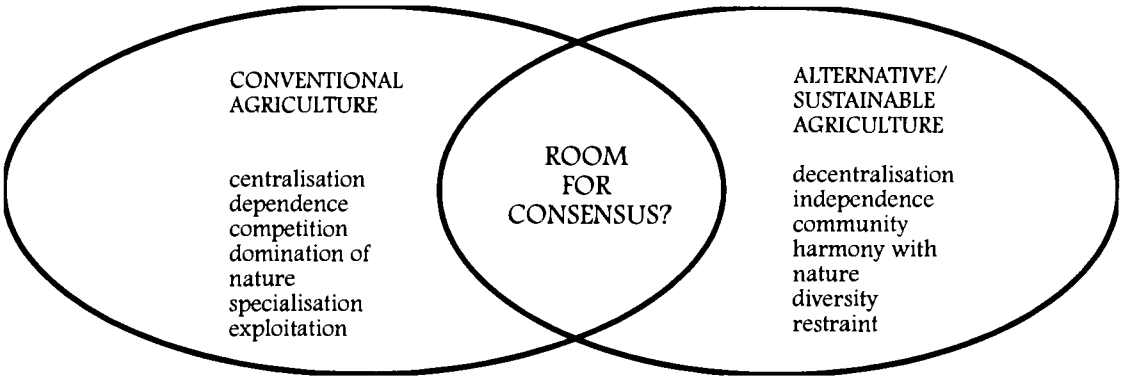


Figure 3.1: Main features of conventional vs. sustainable agriculture approaches (Source: Beus and Dunlap, 1990)

Agricultural sustainability in the South African context is faced with land ownership and land use patterns which have severely degraded the environment and society alike. The regenerative and restorative principles of sustainable agriculture has much to contribute in healing the people and land of this country. In order to traverse the schism which exist in the dual system of agriculture in South Africa, it is imperative that sustainable agriculture is put on the national agenda and be included in the formulation of agricultural policy as a central, as opposed to an *ad-hoc* objective. In this respect, the findings of the on-going IIED project entitled, *Policies that work for sustainable agriculture and regenerated rural economies*, for which South Africa forms one of the case study areas, could greatly inform the formulation of policies aimed at sustainable agricultural development (IIED, 1997). In addition, where practical examples of sustainable agriculture exist, these should be evaluated to ascertain their potential for replication. However, I am also inclined to propose that in addition to highlighting practical examples of sustainable agriculture, local-level action be promoted to develop local-specific sustainable farming methods. In view of the dearth of traditional agricultural knowledge, due largely to the consequences of the effects of the apartheid ideological system, sustainable agricultural development in South Africa should emphasise the importance of participatory learning approaches (Pretty, 1995b). This could assist in unlocking what little is left of traditional agricultural knowledge and to investigate the potential of sustainable farming practices for sustainable agriculture. The step-wise transitional approach promoted by Pretty (1997), an enabling policy environment, and the revival of agriculture, particularly among the youth, are some

of the strategies for transforming the agrarian economy of South Africa.

The farming systems approach to sustainable agriculture in which farm planning and decisionmaking factors in "the temporal, spatial, physical and individual arrangements of interrelated sets of markets, resources, inputs, products, people, and processes" (Ikerd, 1993, 157), has been promoted widely in the search for sustainable farming systems (Edwards, 1989; Ikerd, 1993; Gibbon *et al.*, 1995; Stilwell, 1995). This is not surprising as holism and integration of natural processes and human systems of organisation (political, social, cultural) are key principles in the sustainability paradigm in general. One of the key issues in farming systems research is involving farmers in planning and decisionmaking, which incorporates the design, experimentation, testing and evaluation of different farming methods. In this respect, action or participatory research has been widely utilised. In this research, I will be assessing the potential of an emerging participatory research approach, participatory monitoring, in facilitating the creation of sustainable farming systems. The issue of scale is important in agricultural research, especially in exposing local-global links. In Chapter Four, I will focus on examining the role of participatory research in transforming agriculture from high-input, capital-intensive systems to 'healthy' agricultural systems which are people-centred; ecologically sound, economically viable and politically just. Thereafter, the structural underpinnings of the case study, the Warmwater Farming Trust, will be described (Chapter Five).

# - CHAPTER FOUR -

# PROMOTING ON-FARM AGRICULTURAL SUSTAINABILITY: THE ROLE OF PARTICIPATORY RESEARCH METHODS

> To most poor people in rural areas, for whom daily contact with the environment is taken for granted, it is difficult, if not impossible, to separate management of production from the management of the environment, and both form part of the livelihood strategy of the household or group.
>
> (Redclift, 1995, 36)

The importance of local-level environmental management has been the focus of a number of recent publications outlining the success of community-based initiatives (Ghai, 1994; Ghai and Vivian, 1995a; Redclift and Sage, 1995). From the rubber tappers in Brazil (Redclift, 1995) to farmers in Ghana (Nsiah-Gyabaah, 1995) and Kenya (Thompson and Pretty, 1996), the cases presented indicate that "sustainable environmental management, and, where necessary, environmental rehabilitation, can only occur where active local-level support exists" (Ghai and Vivian, 1995b, 1). In addition, many of the cases presented in the literature focus on the nature of environmental activism in the South in which the notion of securing sustainable livelihoods features strongly (Redclift, 1995). Savenije and Huijsman have also said that "the most crucial local level factor in sustainable development is social and political acceptance among rural land users of the idea that the environment requires management and concerted action" (1991, 14). They provide five reasons why environmental action at the local level is of such fundamental importance. These include the

- recognition of the wealth of indigenous (*local*) knowledge and experience;
- sound decisionmaking based on location specificity such as ecological conditions, social differentiation, tenure relations and local power structures;
- mobilisation of group action enabling collective action and the development of joint responsibility;
- development of an integrative framework in which the social and political realities of land users can be fully assessed;
- and accountability and evaluation of compliance to regulations or to goals can be very effective at the local level where continuous monitoring could greatly strengthen environmental management within agriculture.

(Savenije and Huijsman, 1991)

Establishing community-based environmental structures on-farm or within agricultural regions will enable sustainability issues to be implemented at the local level. The success of the landcare initiatives in Australia indicate that resource users are capable of reversing land and water degradation. The landcare programme has been put forward as a "model for effective community action to assist the move to more sustainable resource use" (Curtis *et al.*, 1995, 415). It essentially places responsibility for sustainable land management issues such as water quality decline and soil erosion with resource users. Consequently, more than 1900 landcare groups have been operating across Australia. This clearly demonstrates that in planning for sustainable agriculture, farmers are the most important actors at the local level. Initiatives to start a landcare programme in South Africa are also being co-ordinated by the Resource Conservation Directorate of the Department of Agriculture (Landcare South Africa, 1997).

The research presented here is intended to be a small step in increasing the capacity of farmers to develop sustainable livelihoods through local-level action, deemed to be one of the essential bases of sustainable agricultural development. Recent developments in the South African context advance the promotion of such action. While the formulation of the land policy and the *Rural Development Framework* (DLA, 1997; Rural Development Task Team and Department of Land Affairs, 1998)) deal with the creation of sustainable rural livelihoods, the recently completed *Poverty and Inequality Report* (May, 1998) adds weight to this argument. The *Poverty and Inequality Report* adopted both quantitative and qualitative research methods to review the extent and nature of poverty and inequality in South Africa, assess the current policy framework for reducing poverty and inequality and provide guidelines on the formulation of such policy (May, 1998). The *South African Participatory Poverty Assessment* (SA-PPA) formed the qualitative input into the project and explored local conceptions of poverty utilising participatory methods, "based specifically on the perceptions, experiences and aspirations of the poor" (May *et al.*, 1998, 4). This included the extensive use of participatory rural appraisal (PRA), which has been recommended by researchers for its potential application in South African rural development strategies which incorporates the "views and skills of rural people in formulating locally appropriate development strategies" (Binns *et al.*, 1997, 3).

Thus, a framework for the application of participatory research methods exists within the overall need to reduce poverty and inequality in South Africa. Participants in the SA-PPA listed seven elements regarded as being important in the creation of poverty.

These included the range of mechanisms aimed at land dispossession, a neglect of support services and facilities, and the lack of protection given to farm workers (May *et al.*, 1998). Participatory research, conducted with farm workers on issues of land reform, sustainable livelihood creation and sustainable agriculture, falls within the ambit of current debate centring on the formulation of policies which are responsive to the needs of those who are 'researched' (May *et al.*, 1998). The

> acceptance of participatory methodologies as a valid form of information gathering for the formulation of policy suggests that there may well be a role for a sustainable programme of participatory research in the future. This would be a valuable tool assisting the formulation of national policy while remaining sensitive to the voice of the poor and their understanding of their own situation.
> (May *et al.*, 1998)

In this chapter, I will discuss the rationale behind monitoring sustainability, the role of a participatory monitoring process in achieving this, and the methodological tools employed in the field research component. The basic field research procedure implemented with the farmers of Warmwater, will also be outlined.

## 4.1. MEASURING SUSTAINABLE DEVELOPMENT

With the growing interest in sustainable development, research is increasingly focused on ways in which to measure progress towards the goals of sustainable development. Encompassing environmental, economic and social dimensions, sustainable development requires an adherence to basic principles such as integrated decisionmaking, public consultation and participation. Conventional measurements of 'development', implemented primarily at the global and national levels have included gross national product (GNP) and gross domestic product (GDP). Primarily economic in nature, these measurements have received a great deal of criticism as they are not true reflections of welfare within a society, in fact they provide little indication of the distribution of income in society (Morris, 1979; Todaro, 1989). Other measures, such as the Human Development Index (HDI), developed by the United Nations Development Programme, have subsequently evolved. The HDI is used at an international scale and assesses development on the basis of three indicators namely, literacy, income and life expectancy (UNDP, 1996). Such measures. i.e. GDP and the HDI, are not appropriate for implementation at the farm level, with which this research is concerned.

Indicators or measures of performance are not new concepts, but they were popularised in relation to sustainable development issues during the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro in 1992. Couched within the sustainability debate, indicators were put forward as an ideal tool for monitoring progress at various scales, from global to local (Wynberg, 1993; Atkinson *et al.*, 1997). Sustainability indicators have therefore gained popularity at both the global, national and local scales. At the global level, economic indicators such as GDP, welfare indicators such as the Human Development Index (HDI) and the Physical Quality of Life Index (PQLI), have been drawn on to assess levels of well-being, prosperity and economic growth. However, many indicators have often been overtly economic, focusing on economic growth as the primary measure of human well-being. With environmental issues coming to the fore in the last two decades, indicators of environmental sustainability have also been put forward. However, environmental indicators often reflect changes in the natural environment only. The status of selected indicator species are monitored, and fluctuations in the population of these chosen species would be used as an indication of environmental change, either natural or human induced. For example, frogs are often selected as indicator species as they are very sensitive to environmental change (Oelofse *et al.*, 1997).

The interest in sustainable development has also increased attempts to measure progress towards sustainability. At the global level, a range of institutions have developed environmental programmes which provide social, environmental and economic measures. The United Nations Environment Programme's Global Environmental Monitoring System; the Organisation for Economic Co-operation and Development's (OECD) work on Environmental Indicators; and the International Geosphere-Biosphere Programme of the International Council of Scientific Unions, are all examples of indicator-based environmental monitoring systems (Liverman *et al.*, 1988; OECD, 1991; Bakkes *et al.*, 1994). In their review of global indicators of sustainability, Liverman *et al.* state that current indicators are not the most sensitive or useful measures and that sustainability indicators could be a useful alternative (Liverman *et al.*, 1988). In practice, monitoring is emerging as a key developmental tool in South Africa.

Monitoring is one of the central recommendations of the proposed Integrated Development Plans (IDP's), which will be employed at the local government level to focus on addressing both poverty alleviation and economic production at the local level

(PLANACT, 1997). Reconciling growth and equity concerns provides a formidable challenge at the local level. Integrated Development Planning emphasises performance measurement, monitoring and the involvement of local communities in decisionmaking (Ministry for Provincial Affairs and Constitutional Development, 1998). Also, One of the key strategies put forward to reduce poverty and inequality in South Africa is monitoring and evaluation (May, 1998). Furthermore, researchers working on land reform have suggested that indicator-based monitoring be an integral part of devolving responsibility for environmental management to the local level (Cooper *et al.*, 1996; Marcus *et al.*, 1996).

> A key component of the [Department of Land Affair's] Monitoring and Evaluation System is to establish suitable indicators for environmental impacts associated with land use activity...[which will be] based on quick reconnaisance made by physical observations, followed by village interviews to investigate people's perceptions of change to the environment.
>
> (Cooper *et al.*, 1996, 598)

> Monitoring natural resource use will be important, and can be done effectively by the users of the resource themselves. One cannot legislate better management, but incentives and support such as extension services and education can encourage behavioural patterns and land use practice which ensures the sustainable use of natural resources.
>
> (Marcus *et al.*, 1996, 122)

Drawing on trends in the literature on sustainable agriculture in South Africa, it was clear that ensuring the sustainability of agriculture within the broad context of the land reform process is imperative (Auerbach, 1995; Cooper *et al.*, 1996; Lebert, 1994; Marcus *et al.*, 1996). A framework for the promotion of community involvement, local-level decisionmaking and performance measurement aimed at sustainable land and agrarian reform, therefore exists. It is this approach which has been adopted in my research. By virtue of its focus on local-level action, a participatory research framework has been selected in promoting the implementation of sustainable agricultural systems at the farm level. The focus on community-based, participatory approaches in environment and development research is also indicative of the paradigmatic shift in development research and practice (Ghai and Vivian, 1995a; Redclift and Sage, 1995). I have employed three basic approaches in this research which include a literature survey; informal meetings with academics and practitioners working in the agriculture and land reform sectors in the Western Cape primarily; and field research (See Appendix A). The methodological underpinnings of the field research, aimed at 'measuring' progress towards sustainable agriculture, will be discussed in the remainder of this chapter.

## 4.2. PARTICIPATORY MONITORING: ASSESSING PROGRESS TOWARDS SUSTAINABLE AGRICULTURE

Poor planning and a lack of knowledge of local environmental conditions and community dynamics have led to the failure of many agricultural projects globally, as well as in South Africa (Ramphele and McDowell, 1991; Hallowes, 1993). This is illustrated particularly in the context of agricultural development in the former homelands (Cooper,. 1991a; Letsoalo, 1991). There is thus a need for improved research into not only the physical environmental conditions, but also land tenure issues and infrastructural support in agriculture (Kakonge, 1995). Thus, a holistic approach which can assess all the facets of agricultural development projects in an integrated manner, is required. Often, economic factors have overshadowed many other factors of production, such as land tenure and labour. The inclusion of the social dimensions of a project would demonstrate the effect that the project is having or could have on the well-being and quality of life of the target population (Fernandes, 1990). It was therefore imperative to me that the methods which would be applied in the fieldwork component of the research be holistic, systemic and participatory.

In planning for or assessing agricultural sustainability at the farm level, a number of methods have been developed: such as farming systems research and extension, agroecosystem analysis, integrated nutrient management, environmental cost benefit analysis, land use planning and environmental impact assessment (Savenije and Huijsman, 1991). These approaches attempt to improve the incorporation of environmental considerations into project planning. For example, Environmental Impact Assessment, a planning tool, is often used in the process of decisionmaking around projects, policies and plans. It serves to identify possible impacts on the environment, investigate alternatives and suggest mitigating measures. However, one of the major drawbacks of this process is the lack of public participation and an incorporation of the social outcomes of projects (Ngobese and Cock, 1997). Another method, employed within the environmental management sphere is the Environmental Audit. It is a mechanism for evaluating environmental performance, checking compliance with legislation and policy, and assessing whether environmental management systems are effective (Heydenrych, 1997). Many of the environmental assessment methods employed are also complex and were therefore not deemed suitable for implementation by communities at the local level. Agricultural modelling exercises are the methods mostly used in the agricultural sector and are still largely influenced by the positivist scientific paradigm. Complex mathematical exercises and formulae have

been put forward to model the productivity of agriculture - even at the farm level (Hansen and Jones, 1996). These often take into account 'scientifically measurable' factors to assess agricultural productivity, resulting in the creation of indices which are usually complex to operate, requiring the skills of an agricultural scientist or economist. It will therefore not be appropriate for implementation at the farm level, where simple methods which are easy to understand and to implement, are required.

There are a number of obstacles to developing an on-farm assessment of sustainable agriculture, such as the need to compare various measurement techniques. However, the primary aim of my field research is to develop a tool which is relevant, simple to administer and focused on the development of more sustainable farming systems. How does one measure or determine the sustainability of agricultural systems? Various tools for sustainability have been put forward as practical ways in which to assess progress towards a people-centred, environmentally sustainable and economically viable development path. The various dimensions of sustainability, economic, ecological and social has also led to the development of an array of methodologies ranging from qualitative to quantitative approaches (Farshad and Zinck, 1993). These tools have been used to assess agricultural sustainability at a variety of spatial and time frameworks. For this research, tools suitable for local level management aimed at sustainable agricultural development, were sought. The main criteria in adopting the methodology was that it involve communities in project planning, implementation and evaluation; be understandable to the community; be holistic; be relevant to the agro-ecosystem; enable sound decisionmaking; be applicable and relevant at the farm-level; and prioritise sustainability within the farm management system. In particular, I wanted to develop a monitoring tool, enabling farmers to regularly assess how far along the road to sustainability they were.

Monitoring was chosen as the assessment tool as it has been stated that "good monitoring is a logical extension of community involvement in project planning and empowers the local community to recognise problems and make corrections" (Canadian Council for International Co-operation, 1995, 12). In addition, monitoring allows for a long term, on-going engagement of sustainability issues within agricultural management. This assessment will therefore focus on local-level monitoring of the bio-physical, social, political, economic and environmental components of agriculture - reflecting the multidimensional nature of sustainable development. Monitoring is a process, not a product and has as its basis the recognition for potential change. It is the

"intermittent (regular or irregular) surveillance carried out in order to ascertain the extent of compliance with a predetermined standard or the degree of deviation from an expected norm" (Hellawell, 1991, 2). In selecting a suitable monitoring system, certain questions needs to be asked, such as why monitor? who will monitor? what will be monitored? by whom and how often? Monitoring could be conducted to assess the effectiveness of policy, as an auditing tool and detecting incipient change (Hellawell, 1991). It is the monitoring function for achieving sustainable agriculture in a South African land reform context that will form the focus in this research.

Another key question is how to monitor? How can monitoring be implemented at the farm level, utilising the knowledge and skills on the farm? Contrary to standard approaches to monitoring, which extract information from participants, a strong case has been put forward for participatory monitoring of developmental and environmental issues (Abbot and Guijt, 1998). An example of a participatory monitoring process is the internal learning system for livelihoods and micro-credit programmes, implemented in India, which uses pictorial diaries of change as one of the key elements in their monitoring process (Noponen, 1997). As the researcher stated:

> Participatory research methods have been hailed as a superior approach to monitoring and evaluation. Some of the concepts and ideas of participatory methods are that the poor are capable of investigating, analysing and planning for their own situation.
>
> (Noponen, 1997, 31)

Participatory monitoring essentially provides the scope for increasing participation, accountability, improving understanding, enhancing local level capacity and sustaining partnerships between different stakeholders (Abbot and Guijt, 1998). Though there are not many practical examples, a discussion paper, written by the IIED's Sustainable Agriculture and Rural Livelihoods Programme (SARL) provides an overview of what can be done, establishes the principles of participatory monitoring, and provides lessons on good practice (Abbot and Guijt, 1998). Research dealing with agricultural sustainability forms a big part of the emerging research on participatory monitoring, for example one of the case studies cited in the SARL document deals particularly with participatory monitoring and impact assessment of sustainable agriculture initiatives in Brazil (Abbot and Guijt, 1998). Faeth has also said that physical monitoring of agriculture in the poorer countries of the world, could greatly improve understanding of the environmental impacts of agriculture (Faeth, 1994). However, one of the key concerns of participatory research in general, and of participatory monitoring in particular, is

the trade-off between rigour and participation. Abbot and Guijt (1998) ask the question: what is lost and what is gained when monitoring moves away from being a scientific approach and embraces participation? This question revolves essentially around ontological and epistemological issues which involve claims of an objective science, the validity of quantitative vs. qualitative research, the search for an objective reality and the notion of rigour. However, I would argue strongly against this duality between participatory research and scientific rigour - the one need not exclude the other. The links between scientific research and political power, particularly the (im)balance of power in using this science at the global geopolitical scale should not be discounted (See Shiva, 1991). A critical stance of the unquestioning faith in science need not negate the value of scientific enquiry, the scientific method or empirical research in general. As Agrawal, writing on the great divide between indigenous and scientific knowledges states:

> It is only when we move away from the sterile dichotomy between indigenous and western...seek out bridges across the constructed chasm between the traditional [local] and the scientific, that we will initiate a productive dialogue to safeguard the interest of those who are disadvantaged.
>
> (Agrawal, 1995, 433)

This balanced approach will be adopted in the selection of the monitoring system for sustainable agriculture with the farmers of Warmwater. Though trade-offs will have to be made between scientifically measurable indicators and building local-level capacity and participation, this does not preclude the eventual adoption of scientific measurement and data collection by local peoples. In conclusion, Abbot and Guijt's comments on this trade-off embodies the choices which were made in this research project.

> In practice, the balance between scientific rigour and community participation will depend greatly on the objectives of the monitoring process. If monitoring is less about proving proof to others, and more about improving learning and planning, then participation of stakeholders should be the first priority. If local proof of impact is needed, the use can be made of local indicators of change and local norms for 'trustworthiness'. Yet if proof is needed for scientific and/or policy audiences, then externally acceptable approaches might need to be used, to demonstrate changes in ways that are compatible to these groups.
>
> (Abbot and Guijt, 1998, 54)

## 4.3. SUSTAINABILITY INDICATORS, FARMING SYSTEMS AND PRA - AN APPROACH TO PARTICIPATORY MONITORING

The main approaches used in participatory monitoring are participatory rural appraisal (PRA); oral testimony and ecological approaches (Abbot and Guijt, 1998). Based on the case studies reviewed by the above-mentioned researchers, I will describe some of the case studies to illustrate their application in participatory monitoring. PRA-based approaches display a primarily agricultural focus and the examples which were selected to inform my approach focused on monitoring various aspects of sustainable farming systems, such as pests, soil fertility, soil and water conservation programmes, in a range of countries (Abbot and Guijt, 1998). Oral testimony involves qualitative assessments and has been particularly useful in assessing environmental change. A 'community stories' approach has also been advocated as a useful way of evaluating community development efforts (Dixon, 1995). Simple ecological methods, used to assess plant and animal populations, are well-developed and marks the paradigmatic shift in nature conservation and natural resource management of involving local communities in national parks (Meintjies, 1995). In developing a framework for participatory monitoring, criteria related to methods and content needs to be decided upon.

Furthermore, decisions on methodological criteria, such as the degree of participation in design, data collection, analysis and dissemination, and content-related criteria, such as the reliability, relevance and usefulness of findings for the goals of the monitoring process, needs to be taken (Abbot and Guijt, 1998). Thus a method to initiate a participatory monitoring process needed to be developed. In this regard, the use of indicators, closely linked to monitoring processes, as illustrated by international (Halliwell, 1994; Abbot and Guijt, 1998) and local research (Nurick and Johnson, 1997; Oelofse *et al.*, 1997), was chosen. In order to develop a holistic system for on-farm monitoring, three methodological tools, largely participatory in nature were selected. These included farming systems research and extension (FSR&E), PRA and sustainability indicators.

Since the 1970s, increasing recognition has been given to the incorporation of farmers in the development and testing of agricultural research. FSR&E spearheaded this movement (Butler Flora, 1992), but in subsequent years, a number of other participatory research approaches have been formulated. These approaches enabled the development of the research methodology adopted here. It incorporates aspects of the

following three approaches: the on-farm, participatory framework provided by FSR&E; PRA which emphasises the involvement of local people in decisionmaking processes and includes a number of methodological tools aimed at facilitating greater participation; and sustainability indicators, an important tool which can be used to monitor progress towards sustainable development and to include the public in planning and decisionmaking processes (Pinfield, 1996). These three approaches contain within them the philosophy and methods which I felt would enhance researcher and community participation and learning. In addition they are holistic and facilitate the identification of linkages in both space and time. The methodological tools emerged from an alternative political ecology paradigm which, while differentiated from positivist science, regards sustainable agriculture as a learning process; sees uncertainties and new interpretations as part of problem-solving; and embraces different constructed realities as important. Moreover the full involvement of all stakeholders and the adequate representation of their views and perspectives is seen as imperative (Pretty, 1995b).

### 4.3.1. Farming Systems Research and Extension (FSR&E)

The component approach to agricultural research, which is characterised by a focus on individual farming practices (pest management, tillage, labour issues), might have been appropriate in the period of agricultural industrialisation, but a systems approach which focuses on conserving resources, protecting the environment, producing efficiently and enhancing the quality of life of farmers and society, is now required (Taylor, 1990; Ikerd, 1993). This is due to the increasing concern with the negative consequences of modern agricultural methods on the environment, the increasing focus on sustainable agriculture and an increased understanding of the systemic functioning of agroecosystems (Ikerd, 1993; Taylor, 1990). FSR&E is an interdisciplinary approach which evolved in the 1970s to diagnose the constraints to production, conduct research to overcome problems, engage in on-farm trials with the involvement of resource users and extend the developed technology once it is proven to be effective (Butler Flora, 1992). One of the greatest challenges facing research in sustainable agriculture is to understand the systems nature and the complex interactions of agricultural systems (Taylor, 1990). The first step to be taken in a systems approach is to begin to identify the boundaries of the system to be managed, for example the farm as a system. This does not imply mutual independence from other systems (varying in scale for example), but rather enables a sharpening of the "perception of interdependence between systems

and their external environment" (Ikerd, 1993, 154). Important to note is that a farming system includes all resources such as land, water and people. Ikerd (1993) has outlined basic characteristics associated with sustainable farming systems which include the substitution of knowledge and information for inputs. The contribution of FSR&E to creating sustainable farming systems is thus important. It could

- assist farmers to halt processes of farm degradation through farm- or community-level interventions;
- enhance productivity in areas where resource degradation has already taken place;
- draw attention to lower-level policies (local and regional) linked to resource degradation;
- distil credible knowledge from the practices and experiences of existing sustainable farmers;
- and test possible improved sustainable practices/enterprises under a wide variety of production circumstances and in a more realistic whole-farm environment.

(Taylor, 1990; Harrington, 1995)

Importantly, a sustainable farming systems framework requires the adoption of multi- and interdisciplinary approaches (Taylor, 1990; Biggs, 1995). As one researcher states: "Transdisciplinary teams that include farmers and other agricultural practitioners have the potential of keeping the multiple goals of sustainability in focus" (Butler Flora, 1992, 47). An interdisciplinary approach facilitates the links between scientific and socio-economic theory, and the presentation of information in a manner accessible to all stakeholders, ranging from policy makers and scientists through to farmers (Park and Seaton, 1996). One important use of FSR&E has often been to reduce rural poverty and increase the relevance of research to farmers (Biggs, 1995). It has been used in rural surveys, policy research exercises and in strengthening the links between research and extension services (Biggs, 1995). This approach has enabled researchers and farmers to understand complex farming systems and the interactions between the various inputs (Edwards, 1989). Some of the limitations of this approach has been its inability to contribute towards solving major external problems and a neglect of political and institutional analysis (Biggs, 1995; Harrington, 1995). Some recommendations on improving FSR&E includes an analysis of property rights issues; using a political economy framework to understand broader issues and flexibility in methodological development (Biggs, 1995).

Sustainable agriculture research could be conducted within this framework to ensure that multiple dimensions, for example economics, ecology and social justice, are take into account. It could also "help farmers halt processes of resource degradation through

farm or community-level interventions" (Harrington, 1995, 50). One of the recommendations in the farming systems research debate has been the focus on participatory and action research which directly focuses on the involvement of rural communities. In developing an on-farm monitoring system, with the goal of tracking progress towards sustainable agriculture, the holistic framework of FSR&E provided the background and starting point for the participatory monitoring process.

### 4.3.2. Participatory Rural Appraisal (PRA)

Increasing dissatisfaction with the data collection methods utilised in rural development research has led to researchers exploring a range of methods and approaches which would more succinctly represent the realities of rural peoples. Contained within these approaches is methods such as PRA, "a growing family of approaches and methods to enable local people to share, enhance and analyse their knowledge of life and conditions, to plan and to act" (Chambers, 1994a, 953). The origin of PRA can be traced to activist participatory research, agroecosystem analysis, applied anthropology, field research on farming systems and rapid rural appraisal (Chambers, 1994a). The insights of local people form an important part of these methods. Increasing attention to the extent of participation, the role of outsiders and the ability of local people to map, model, observe and quantify their understanding of local issues has set PRA apart from earlier approaches - at least on a conceptual level (Chambers, 1994b). However, PRA usually advocates methodological pluralism (as do most participatory approaches), in which flexibility and adaptivity are key words in selecting and implementing methodological tools. The constants are a

> ...practical engagement with local communities and people, openness to complexity and diversity, a principle of decentralisation and empowerment...and sharing and lateral learning and spread. It manifests and supports methodological pluralism, rapid adaptive change, the analysis and expression of local people's priorities, and democratic local diversity.
>
> (Chambers, 1994c, 1450)

This shift from top-down approaches to an approach which is centred around the active involvement of local people has enabled researchers to be more self-aware and actively involved as both a facilitator and learner in the research process. Several researchers and development practitioners are promoting participatory research as an approach suited to the challenges of research in the 1990s, in which notions of active community participation and local change are increasingly on the agenda. Researchers

in South Africa have also put forward this approach as one which would effectively address rural development issues in the post-apartheid era (Binns *et al.*, 1997). In particular, rural communities in South Africa are often the most disempowered section of the population, and PRA offers an opportunity to unlock the voices of this sector of society. As a participant at a training workshop on PRA in Kwa-Zulu Natal said: "PRA transforms development from an imposition to a rich learning experience" (Cousins, 1993). In addition to the use of simple methodologies, the philosophy of PRA also appealed to me. These include, researcher/outsider participation, an attitude which engenders patience, humility and respect for local people and the use of materials and methods which enable people to express themselves (Chambers, 1993). In this particular context, I wanted to utilise a broad participatory framework to understand the relationship between a group of farmers and the land which they are farming. In essence, this would involve the use of participatory exercises such as resource mapping, timelines and transect walks, as well as adopting the philosophical underpinnings of this approach. Some PRA methods are described in Table 4.1..

**SOME PRA METHODS**

Transect walks: walking with local people in an area and observing, asking, listening, discussing and identifying different agricultural zones, soil types, land uses, vegetation types, crops and livestock. Problems, solutions and opportunities can be identified and resources can be mapped or drawn;

Timelines: compiling chronologies of events listing major remembered events with approximate dates, also noting changes over time for example charting the route which the community followed to access land through the land reform process;

Resource mapping: an exercise in which local people use the ground, floor or paper to construct models of their land;

Venn diagrams: identifying individuals and institutions important in a community, or within an organisation, and their relationship to the community.

Table 4.1: Participatory rural appraisal field research methods (Source: Chambers, 1994a)

In addition to providing a means of gaining a broad overview and understanding of the farming system, FSR&E and PRA have provided important start-up tools in the participatory research framework which guided the field research. It is hoped that this would enable participants to "set and achieve their own management standards

working within local means" (Lamb, 1993, 38). In the following section, the primary research tool, that of developing sustainability indicators, will be described. Numerous authors have supported the need for the development of performance measures or criteria by which progress towards sustainable development could be assessed. As Pretty states: "At the farm or community level, it is possible for actors to weigh, trade off and agree on these criteria for measuring trends in sustainability" (Pretty, 1995b, 1248). The motivation for selecting sustainability indicators as a tool in the development of a local-level participatory monitoring process, is discussed below.

### 4.3.3. Sustainability indicators

Recently, the notion of sustainability indicators have increasingly replaced the unidimensional natural environment focus of environmental indicators. What are sustainability indicators then? Sustainability recognises the linkages and inter-relationships between the economic, social and environmental components in communities. Sustainability indicators are potentially important tools for both resource planners and users to link the different dimensions of sustainability; define a systematic suite of indicators for a range of users; monitor progress; and enhance decisionmaking (Erskine, 1997; O'Riordan, 1998). Researchers writing on agricultural sustainability, such as Butler Flora (1992), Park and Seaton (1996) and Tisdell (1996), have stated the need for multi-dimensional indicators of success which will move beyond economic and productivity notions to consider the broad spectrum of issues in sustainable agriculture. The development of performance criteria or sustainability indicators for agriculture could operationalise questions about long-term sustainability and could be used as a tool for guiding action (Gibbon *et al*, 1995; Pretty, 1995b; Thompson, 1995; Park and Seaton, 1996).

Sustainability indicators usually consist of an aggregate of factors or primary indicators which point to areas of weakness in the links between economy, environment and society and allow their problem areas to be fixed quickly and effectively (Hart, 1997). A sustainability indicator is therefore an early warning system in the sustainable development process. It is a tool that tells us what parts of the system need attention and what needs to be changed to find solutions to the problem. Indicators can be used to measure change and as a means of assessing progress in terms of achieving targets or goals of sustainable development and so can be used to inform management processes. A sustainability indicator has two key roles: first, to identify, and second, to monitor

environmental parameters of stocks of ecological, economic and cultural capital (Oelofse *et al.*, 1997). Increasingly, the development of community-based indicators have illustrated the potential for developing partnerships between research institutions, managers and the communities who intend to use the indicators (Miraftab, n.d.; Nurick and Johnson, 1997). Sustainability indictors go further than measuring just one element or part of the environment. The cumulative effect of changes in the environment need to be measured and monitored. Certain aspects of environmental impacts are manageable on their own, but it is the cumulative effects that become problematic. This is also important in the decision-making arena: often the effects of decisions and policy or actions are problematic in combination and so it is important to try and set up aggregate indicators (Oelofse *et al.*, 1997).

Several questions need to be asked in the formulation of sustainability indicators. What will the indicators be used for? Which subjects or themes should the indicators cover? Who will develop the indicator? Which criteria would be important - measurability, analytical soundness or relevance to communities? While some researchers have stated that sustainability indicators should be developed in accordance with environmental quality levels stipulated by national goals or policies, as well as international agreements (Bakkes *et al*, 1994; Organisation for Economic Co-operation and Development, 1991), others have focused strongly on the involvement of local people in the formulation of indicators to measure change and stress in local environments (Nurick and Johnson, 1997; Oelofse *et al.*, 1997; Pepperdine, 1998). The reasons for developing the indicator should largely determine how the indicator should be developed. In fact, the purpose for which indicators will be used greatly affects the indicators which are chosen; the tools for 'measuring' or assessing the indicator; space and time factors of analysis; as well as the type of monitoring (in-situ or ex-situ). In utilising indicators in participatory monitoring, Abbot and Guijt have put forward a common tool to help in the indicator development process - SMART (Specific, Measurable, Action-oriented, Realistic, Time-framed) - these criteria should however be clarified on ease of use, measurement and interpretation (Abbott and Guijt, 1998).

Though sustainability indicators can fulfil a number of functions, such as developing goals and establishing current environmental status, they have often been used as a tool for monitoring the effects of development initiatives over time. Monitoring is an important phase of the project management cycle, and sustainability indicators represent a tool to monitor the status, progress or effects of a development project.

Pinfield (1996) has put the concern that sustainability indicators have bypassed some fundamental issue in the quest for sustainable development. These include an over-emphasis on the measurability of sustainability indicators; an emphasis on environmental indicators, at the expense of social or 'quality of life' indicators; the maintenance of GDP per capita as the primary economic indicator; and the powerlessness of indicator exercises to effect any change to global or national forces which perpetuate poverty and inequality (Pinfield, 1996). To help overcome some of the 'barriers' of sustainability indicators, Pinfield (1996) has suggested that decision makers such as local governments need to change their relationship with communities; and that policy makers within government need to engage communities to a greater degree. This could enable sustainability indicators to develop into a much more 'powerful' tool which could influence policies and plans to a greater extent.

Indicators of agricultural sustainability put forward focus largely on economic and environmental indicators, such as percentage of soil organic matter, measures of biodiversity, use of chemical fertilisers and pesticides per unit of area and per year (Tollens, 1998). Indicators based on the Framework for Assessment of Sustainable Land Management, containing physical, agronomic, economic and social indicators are also very complex, and possibly require training in measurement techniques for community use (Neave *et al.*, 1998). The indicator system must therefore be suited to the users and should be developed at the level which is understood by the users. Some researchers have put down specific criteria for indicators, such as measurability, a predictive capacity and the establishment of threshold or reference values (Liverman *et al.*, 1988). Performance measures or indicators have often been applied in the environmental management systems of industries, national policies and the business sector. This has led to the formulation of sustainability indicators which require scientific or economic measurement, extensive collection of data and input by outside experts (OECD, 1991). At the local level, a completely different set of indicators could be developed. Importantly, these would be identified and prioritised by communities, are often simple enough to be monitored by communities, and could serve as a measure by which the progress of development and change efforts could be monitored (Oelofse *et al.*, 1997). It is this approach which has been adopted in the fieldwork component of this research. At the Warmwater Farming Trust, local-level indicators could play an important role at the community level in understanding the various issues which are of importance to farmers, in assisting farmers to set goals for themselves and in monitoring progress towards these goals. To set up indicators with communities we need awareness,

education, research and testing (Oelofse *et al.*, 1997). Importantly, we need the formulation of strategies which are capable of effecting a change.

## 4.4. LEARNING FROM ELSEWHERE

The discussion paper by Abbot and Guijt cite ten examples of participatory monitoring approaches, of these many were PRA-based, related to agriculture and utilised indicators. Local-level agricultural research, utilising participatory monitoring, has emerged fairly recently. They therefore provide valuable lessons for this research, centring on the promotion of sustainable agriculture on a Western Cape land reform project, which include:

- an assessment of the objectives vs. achievements of participatory monitoring;
- an evaluation of the trade-offs involved;
- an investigation into the use of monitoring data and feedback loops;
- an analysis of the roles of different stakeholders;
- and the financial costs of participatory monitoring.

(Abbot and Guijt, 1998)

These questions are important considerations in implementing a participatory monitoring system. However, experiences from other projects in dealing with some of these questions could also be drawn on. To this end, two projects involving sustainability indicators and the initiation of monitoring systems in the rural context will be briefly examined. The first project involves the use of science-based indicators of water quality which resulted in the establishment of a people's organisation, *Tigbantay Wahig* (water watchers) in the Philippines (Deutsch *et al.*, 1998). The overall aim of the project was to encourage community-based water monitoring groups which would collect "credible water quality and quantity data that lead to environmental and policy improvements" (Deutsch *et al.*, 1998, 4). Indicators were selected on the following basis: that they were based on scientifically valid methods; were relevant to the community; practical and relatively inexpensive. Citizen monitors and researchers worked in partnership to monitor the science-based and community perception indicators. The water quality indicators described environmental change (land and water) and was subsequently submitted to the local government unit which incorporated community-based water testing and research findings into their Natural Resource Management Plan. One of the most important findings of this project was that the hands-on activities of environmental monitoring has been a "tremendous

motivation for community participation, awareness and action" (Deutsch *et al.*, 1998, 16). This project, though largely focused on the development of science-based water quality indicators, is a very good example of the way in which "development and extension of information and community action are occurring simultaneously" (Deutsch *et al.*, 1998, 19). Furthermore, it provides sound evidence that room for collaboration exists in the development of indicators which are relevant, understandable to communities and which are scientifically measurable. The potential for partnerships between communities and scientists, particularly in natural resource management, therefore exists.

The second example describes the development of social sustainability indicators, to be utilised alongside more conventional environmental and economic indicators. The project was initiated in a river catchment area in Victoria, Australia (Pepperdine, 1998). Focusing on the social dimensions of rural community sustainability, locally specific indicators will be developed through a process of community stakeholder involvement. This will assist in understanding the issues facing rural communities; generating locally-relevant indicators and empowering the community to undertake action, such as monitoring the local environment. The scale employed in this project, similar to the Philippines study, is at the catchment level. The objective of the project is "to enable the monitoring of rural social sustainability to better assist Integrated Catchment Management planning" (Pepperdine, 1998, 4). The research findings, incorporating a comprehensive suite of indicators of social sustainability, will also be used by planners, whether at the community, catchment or national levels. The main research methods employed include both qualitative and quantitative investigations, involving interviews with community stakeholders and an analysis of statistical data. The types of indicators reflecting social sustainability include community participation, levels of leadership, morale, sense of place and learning (Pepperdine, 1998). The social sustainability indicators proposed in this project differ vastly from the Philippines case study which focused largely on scientifically measurable community-based indicators of water quality. However, they have similar objectives of monitoring environmental change in relation to community well-being or sustainability.

Lessons learnt from these and other projects include the need to build bridges between community-based indicators with those of researchers (Abbot and Guijt, 1998; Deutsch *et al.*, 1998; Pepperdine, 1998). This could involve trade-offs as the advantages of simplicity and relevance to communities need to be weighed against precision required

for scientific measurements. In working towards an approach in the field, the key steps in indicator-based participatory monitoring, developed by Abbot and Guijt (1998) will serve as a useful reference point. Though it is presented as a series of steps, indicator development and monitoring is an iterative learning process and is thus dynamic.

## 4.5. TOWARDS AN APPROACH IN THE FIELD

At the heart of the methodological tools employed in this thesis lie notions of participation and new ways of learning with the main aim of "mobilisation for collective action, empowerment and institution building" (Pretty, 1995b, 1251) at the farm level. However, in his typology of participation, Pretty has described the existence of a continuum of participatory approaches, ranging from manipulative and consultative through to interactive and self-mobilising participation (Pretty, 1995b). One of the important aims of the field research at Warmwater was to promote local-level action through farmer participation in identifying criteria or indicators of agricultural well-being. In this respect, self-reflexivity, was an important part of ensuring that my role as a facilitator, learner, participant and source of new ideas, was continuously evaluated. It is hoped that the field research at Warmwater will promote an interactive, rather than extractive learning process. The methodological approach adopted in this research, involved a combination of FSR&E, participatory research and sustainability indicators. A four-stage approach which included establishing contact with the community, conducting field research, ensuring that report-back mechanisms are in place, and drawing up recommendations for future actions, was adopted. These are briefly outlined below and illustrated in Figure 4.1..

All records of *contact* with the community and background information, such as demography, bio-physical data, local government and historical information which would serve as an aid in understanding the specific local conditions, were maintained. Background information ensures that replication of data gathering does not occur in subsequent exercises with the community. The research concept was presented to the community in an open manner to ensure that they felt able to participate. First contact, and therefore first impressions, were important. The concepts and methods of sustainable agriculture were illustrated in workshop format. Practical farming methods such as conservation tillage, integrated pest management (IPM), mulching, intercropping and crop rotation were described to illustrate some of the methods

advocated by sustainable agriculture practitioners. Initial perceptions towards sustainability were established through informal discussions. Perceptions towards the implementation of a participatory monitoring system, which would act as a tool to monitor progress, determine viability and highlight problem areas, was ascertained at the completion of the field research. A time schedule for the field research, suitable to the farmers, was drawn up.

The history of the project was developed by utilising *participatory research methods.* The composition of the group was established with the community in advance to ensure a good representation of farm members was present at field research exercises. Though it was intended that PRA techniques be employed to get a sense of the institutional arrangements, project evolution, social and power structures of the Warmwater Farming Trust, informal discussions and interviews with project participants provided adequate detail. PRA was used to note the various activities on the farm during the agricultural production year, and in setting up a timeline of the farmers' involvement in the land reform programme (Plate 4.1.). One of the most notable advantages of participatory research was its methodological flexibility which allowed the. adaptation of methods to the questions at hand and to respond to questions raised. Once the timeline exercise, usually a good introductory exercise was conducted, the links between the farm vision, sustainability and monitoring were made. Prior to developing indicators of sustainability, we established the various components of the farming system by firstly conducting a problem analysis of the farm (Plate 4.2.).

The components of the farm were drawn from the problem analysis and formed the basis in the development of indicators. Thus, a *systemic, whole-farm scenario* formed the backdrop to the indicator identification exercises. By discussing the problems experienced at the farm, farmers selected the main components of farms by grouping problems, such as water, soil and management. Indicators were then developed around these components. An example of the various components which constitute a sustainable agricultural system (Table 4.2.) was selected from the literature survey (Chapter Three) and the environmental monitoring system for land reform which was developed for the DLA (Wynberg, 1995). However, it was felt that the farmers of Warmwater were best placed to develop and decide on the various components of the farm. Once the main components of the farm were identified, the group identified indicators which would indicate the likely changes in the various components of the farm. This involved selecting *indicators* which could be used as signs by which progress

towards sustainability could be monitored (Plate 4.3.).

| MAIN COMPONENTS OF SUSTAINABLE FARMING SYSTEMS: |
| --- |
| *Biophysical component:* water (quantity; quality; cost); soil (quality of structure and composition); grazing and rangeland conditions; plant and animal communities |
| Environmental component: biodiversity, pollution, pesticide application, environmental conservation (cultural and environmental) |
| Institutional component: agricultural advice; institutional set-ups; government assistance, policy influences |
| Economic component: cost of inputs and factoring in of environmental considerations |
| Social component: needs assessment e.g. housing, schooling, electrification and health |

Table 4.2: Main components of sustainable farming systems

Indicators would enable one to monitor observed change. It involved a range of decisions on measurement techniques, sources of data and the frequency of monitoring. Once indicators were formulated, they could be ranked in terms of their importance to the community, for example, identifying critical sustainability indicators. They could then be compiled into a workable system which is understood by community members. As the indicators were being developed for use by farmers, they had to be relevant in responding to the needs of the farmers; measurable, either by physical observation, counting or other methods understood by the farmers; and understandable. Locally-based indicators were not likely to include scientific or technical indicators. However collaboration between researchers and local communities could lead to the development of science-based indicators, as shown by the Philippines study (Deutsch *et al.*, 1998). In such instances, it is important that collaborative research make use of methods "that are intelligible to, and useful for, all stakeholders" (Abbot and Guijt, 1998, 44). An example of locally-generated indicators is provided in Table 4.3..

*Feedback* of the results occurred once the findings of the fieldwork had been collated into a format which could be presented at a community meeting. This forum enabled research participants to add, verify and correct information and to make suggestions with regard to the presentation of the results.

Plate 4.1.: The timeline developed by the farmers, 25 May 1998

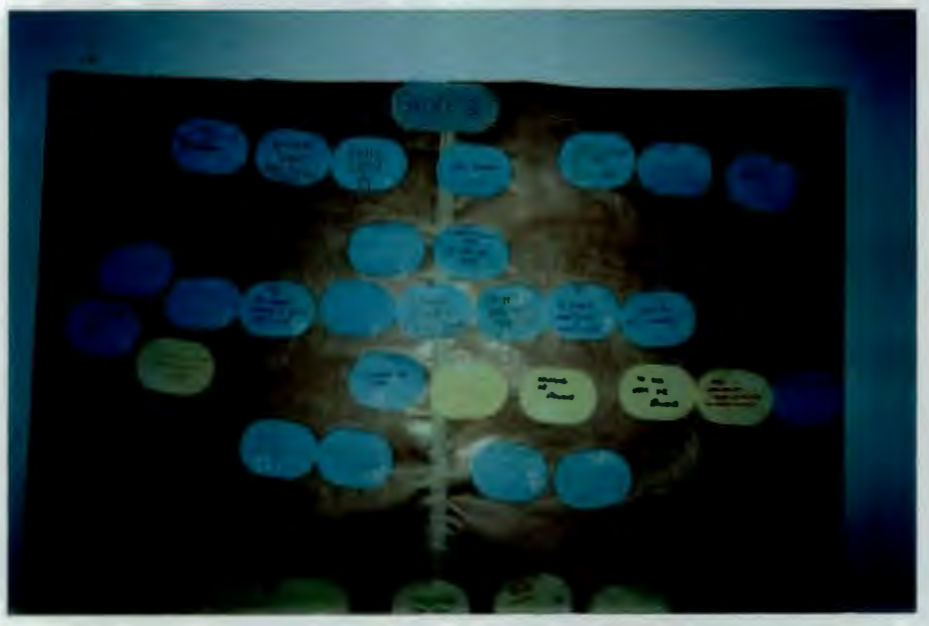

Plate 4.2.: Problem analysis conducted by the farmers, 26 May 1998

Plate 4.3.: Indicators developed on natural resources, 4 June 1998

| Indicator | Measures | Source of data |
|---|---|---|
| pest population | presence of agricultural pests | visual checks by community |
| soil erosion | tillage practices e.g. how deep they plough | visual checks by community, soil scientist input |
| water quality | colour of water, sediment load, water quality | visual checks by community, scientific analyses |

Table 4.3: An example of indicators

The figure below (Figure 4.1) illustrates the primary activities included in the field research component: farm background, problem analysis, indicator identification and the on-farm implementation process. The field research did not involve the implementation of the indicators, though this was discussed during the feedback process. Questions relating to the usefulness of participatory monitoring, land reform and sustainable agriculture were also be posed, particular relating to the ability of 'emerging' farmers to farm sustainably and successfully. The research dissemination process and products arising from the research was also decided on in the feedback workshop.

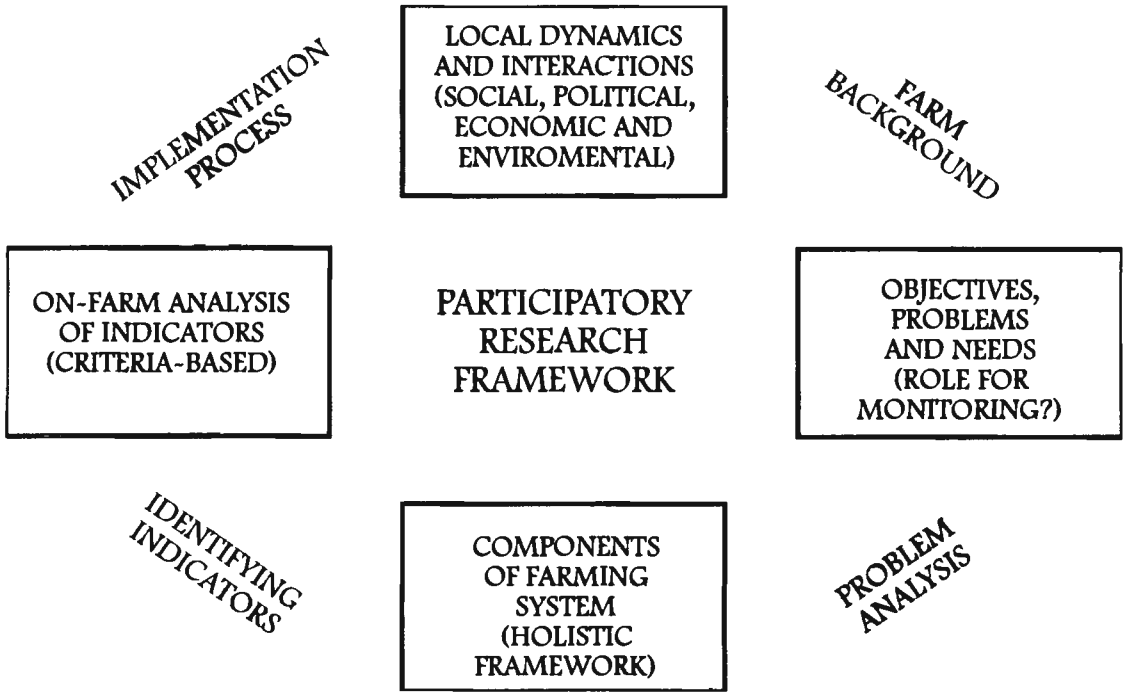


Figure 4.1: The indicator-based monitoring process implemented on the Warmwater Farming Trust

One of the key principles driving this research at Warmwater was the need to motivate for the adoption of sustainable agriculture in land reform. However, no *one* method was presented to the community. Rather, an attempt was made to highlight the main principles of sustainable agriculture and the role of monitoring whole farm systems through the use of sustainability indicators. An approach, geared towards the transformation of a conventional agricultural production system to a sustainable one, rather than focused on *one* sustainable agriculture approach, was therefore adopted. It was deemed necessary, in view of the lack of information available on sustainable agriculture practices in South Africa, to begin focusing on ways in which to initiate locally-developed strategies and approaches. As Ikerd states:

> A given set of farming practices or methods is not inherently more or less sustainable than any other set of farming practices or methods. Sustainability depends on the nature of whole farming systems. The goals and values of long-term sustainability must be reflected in combinations of practices and methods that are consistent with an individual farmer's unique set of resources, including his or her knowledge base, technical know-how, and farming opportunities. Sustainable farming systems are very much individual farmer and farm-site specific. Sustainability is determined by the system, considered as a whole, not by its individual components.
>
> (Ikerd, 1993, 155)

This research therefore deals with initiating an indicator-based participatory monitoring process on the farm, the Warmwater Farming Trust, located in the Western Cape province. The political ecology framework of analysis adopted in my thesis, requires that the structural underpinnings of land reform in the province be understood. Moreover, the configuration of land and agrarian questions relates strongly to particularities of the province, such as the socio-economic and political processes of the colonial and apartheid-eras. A consideration of the agrarian economy of the region is therefore indispensable to understanding the Warmwater Farming Trust.

# - CHAPTER FIVE -

# FORTRESS WESTERN CAPE[3]: ASSESSING THE SCOPE FOR LAND REFORM

> The Western Cape Province is distinctive in several aspects, having demographic, social, agroclimatic and economic features that contrast significantly with the rest of South Africa. These differences provide strong rationales for agricultural and rural development policies reflecting the specific needs and opportunities of the province. Reconstruction and development programmes for the Western Cape should logically differ in content and/or emphasis from those designed for the rest of the country.
>
> (Eckert *et al.*, 1996, 101)

Agriculture plays a vital role in the economy of the Western Cape and the sector's potential for creating sustainable livelihoods, within the context of land reform, requires further investigation. Agricultural production types include livestock in the semi-arid areas, irrigated vegetable, wine and table grapes and deciduous fruit production. The province produces 20% of the agricultural output of South Africa and 94% of its deciduous fruit production (Fast, 1997). Agriculture also contributes 10% of the province's output. It provides formal employment opportunities for 38% of the region's population and sustains 1.2 million livelihoods in the rural areas. The total number of farm workers in the Western Cape is 191 648, of which 59% are permanent and 41% are seasonally employed (Fast, 1997). The notion that rural development in the Western Cape could be driven by agriculture is therefore especially important (Karaan and Tregurtha, 1996). However, despite the prosperity of agriculture in the province, the conditions of farm workers is often characterised by exploitation, subjugation and poor working and living conditions. With the highest human development index (HDI) of the country, the Western Cape provides the image of a prosperous area. However, the index does not reflect inter-regional inequalities, sprawling informal settlements (both rural and urban) and the racial dimension to the social indicators used to determine the HDI (Karaan and Tregurtha, 1996).

The Warmwater Farming Trust (WFT), the case study component of my research, is

[3] This term was used by Merle Lipton to denote the unique configuration of the province, such as the historical antecedents and the current political character which has led to the fortification of the commercial agriculture sector (Lipton, Merle, 1996).

located in the Montagu district of the Western Cape (Figure 5.1.). Within the Western Cape, the Worcester, Ceres, Tulbagh, Robertson and Montagu districts, dominate horticultural production output (Eckert *et al.*, 1996). The WFT is thus located in the most economically important horticultural region of the province. In addition, it is also predicated on the farm worker equity share (FWES) scheme land reform model, with former farm workers engaged in deciduous fruit production in partnership with an established private agricultural investment company, New Farmers Development Company. As a favoured land reform model, FWES schemes have been accepted by a growing number of commercial farmers, the stalwarts of the Western Cape's agricultural economy, and so the WFT provides an especially useful case study. The dominance of commercial agriculture in the province also presents important challenges for the promotion of sustainable agriculture. The WFT, a deciduous fruit farm in Montagu that must compete commercially to survive, thus typifies many of the current land and agrarian issues of the Western Cape.

This chapter examines the particular characteristics of agriculture in the province by looking at the agrarian history, resultant labour patterns, and the nature of the deciduous fruit industry in prefiguring opportunities for land reform. A profile of the needs and concerns of farm workers, key land reform beneficiaries in the province, will also be provided. The main issues around agriculture and land reform, particularly the dearth of opportunity for agricultural activity within land reform in the Western Cape at present, will be described. Greater knowledge on the regional specificity will assist in understanding the context of land struggles in the province, as well as the configuration of socio-political and economic forces at play in the Montagu area. This will be particularly important in understanding the Warmwater case study. The Montagu district, the location of the WFT, described in Section 5.5. forms a key region of the Western Cape's agricultural economy. A description of the region, as well as some of the key obstacles and biases informing the field research component is outlined here.


Figure 5.1.: Location of the Montagu district, Western Cape

## 5.1. THE SOCIO-HISTORICAL CONTEXT OF AGRICULTURAL DEVELOPMENT IN THE WESTERN CAPE

Understanding the social relationships in Western Cape agriculture depends on acknowledging that slavery, paternalism and racism, inherited from centuries of oppression, have contributed greatly to the configuration of land and agrarian questions in the province. A socially insecure agricultural workforce which depends on its employers for basic needs, such as housing and water, can be found in the province. Furthermore, the long history of commercial agriculture in the region means that there is a well-established white elite and a proletarianised workforce, largely alienated from the means of production. The origins of commercial agricultural production in the Western Cape provides an important basis for understanding and evaluating current land and agrarian issues in the province. Much of the labour patterns observed in the Western Cape today can be directly traced to the historical processes which led to the proletarianisation of agricultural labour in the province.

> Beginning in the seventeenth century, under the aegis of the Dutch East India Company (VOC), arable agriculture in the region was characterised by production for the markets of Cape Town and the pastoral regions of the colony, accompanied by privatisation of land, the stratification of producer wealth and credit, and a labour force more completely divorced from the means of production than elsewhere on the continent.
>
> (Worden, 1989, 31)

A recent study conducted for the Western Cape Department of Agriculture, describes the agrarian history of the province as having four distinct historical periods (Reid, 1996). The stratified patterns of agriculture in the Western Cape can be traced to the period of Dutch occupation of the Cape in which slave labour was prevalent. The first period, from 1652-1909, is characterised by two significant events, British rule at the Cape in 1806 and the discovery of diamonds in 1867. From 1910 to 1947, a series of policies controlling the mobility and migration of labour, aimed at stabilising labour relations and restricting black land ownership were implemented. These include the segregationist land laws, described in Chapter Two. The period of 1948 - 1965 saw the National Party-led government implement a number of agricultural input and marketing acts which supported the expansion of white commercial agriculture in the country (Reid, 1996). These measures, supportive of white commercial agriculture, included subsidisation of agricultural support services, controlled marketing and strict control over agricultural labour. In

fact, farm workers, as well as domestic workers were excluded from the Labour Relations Act of 1965, thus a disparity existed between the rest of the country's labour force and agricultural labourers (Nel, 1989). The period 1966 - 1994 heralds the beginning of the end for the apartheid regime. A great deal of racially-based repression and exploitation occurred during this period, but it was also a time of intense uprising and mass protest against white rule. The importance of pre-colonial agriculture should also not be discounted. Pre-colonial environmental history points to the 'soft' impact of indigenous peoples' agricultural activities prior to white settlement at the Cape (Khan, 1990b). While by no means an utopian society, the land ethic of these early agriculturists contrasted sharply with those of the colonialist farmers who settled at the Cape (Downing, 1978).

With the establishment of the Cape as a refreshment station for the Dutch in the seventeenth century, a number of colonists and employees of the Dutch East India Company settled in the colony. In addition to horticultural production, grazing was an important agricultural activity, thus bringing colonists in direct conflict with the indigenous Khoisan herders and hunter-gatherers. A common occurrence was that of colonists stealing cattle from the Khoisan, and it subsequently became very difficult to maintain their existence as their land and water rights had been completely usurped (Penn, 1989). The effect of Khoisan protest against the expropriation of land was minimal and their hunting grounds and stock was gradually diminished. A steady process of proletarianisation occurred in which the majority "of the Cape labourers were thoroughly alienated from the means of production and held in their position by subservience or force" (Ross, 1986, 76). Thus, many sought employment opportunities on farms (Penn, 1989). In addition to the Khoisan, the agricultural labour force consisted largely of slaves who were

> ...totally dependent on agricultural labour for their subsistence [and] were...held in subservience by bonds that were even stronger than those of the market, namely the legal bonds of slavery. In the eighteenth century, approximately half the non-Khoisan population of the colony was enslaved.
> (Ross, 1986, 76).

The development of agriculture in the then Cape Colony set a precedent for the rest of the country. The Cape was largely agricultural - 47.8% of the total working population of the Cape was employed in the agricultural sector as the census of 1865 reveals (Ross, 1986). Two of the main factors of production, land and labour, were obtained through the expropriation of indigenous lands and the extensive use

of slave labour. The Cape was the earliest region to experience the development of large-scale agrarian commercialisation in colonial South Africa (Ross, 1986). Though initially not a major exporter to Europe, the wheat, wine and meat of the Cape were exported mainly to other colonies in the tropics and in later years to Australia. Grazing lands were established and towns, providing administrative, religious and commercial services to rural dwellers, developed due to the building of roads in the early nineteenth century (Ross, 1986). As statistics on the inter-relatedness of slave labour and farm profitability indicate, the dependence of agriculture on the availability of slave labour cannot be overstated (Ross, 1986). With the abandonment of the slave trade in 1808, and the abolition of slavery on 1 December 1834 in the British Empire, farmers underwent a slight crisis. The official date of emancipation of slaves was on 1 December 1934, but only a small number of slaves had any "skills or qualifications to give them opportunities for an independent existence outside agriculture after they had obtained their freedom" (Worden, 1989, 32).

Between 1834 and 1838 slaves worked for their owners without wages as apprentices. However, after this period, the creation of a post-emancipation permanent wage-labour force which had been envisioned, failed to materialise. Instead, a combination of a hired seasonal labour force and a permanent labour force, partially paid by wages, developed. In addition to a meagre salary, workers were paid in housing, food, clothing and alcohol - thus perpetuating the *tot* system (payment in alcohol) which had been in operation during the period of slavery. The main source of the seasonal labour force was drawn from Cape Town, as well as the mission settlements where some freed slaves had settled. Although some freedmen squatted on government land, "...the resources to enable an independent freedmen peasantry to emerge in the Western Cape were limited primarily to the mission stations" (Worden, 1989, 36). The mission stations were church-owned and provided a refuge for many emancipated slaves. However, they soon became overcrowded and unable to support the number of families settled there. In addition, no attempt was made by the government to make land available after emancipation. Many of the characteristics of slave-era agrarian relations are still evident in the 1990s.

For many farm workers, migration to rural towns and to the rapidly growing Cape Town and surrounding suburbs, provided only limited employment opportunities.

To further secure the post-emancipation rights of farmers over farm workers, the Masters and Servants Ordinance was passed in 1841 which called for contractual agreements between farm labourers and farm owners (Worden, 1989). However, far from protecting labourers against exploitation, the breaking of contracts could lead to fines or imprisonment, thus ensuring stability of the labour force. The impact of the emancipation of slaves was therefore very limited, as arable production was restored to pre-emancipation levels by the middle of the 1840s (Worden, 1989). A complete change in the legal status of labourers resulted in very little change in the relations of production - new methods of labour control substituted the legal institution of slavery and ensured the continuation of the social relations on farms (Ross, 1986). Part of the explanation might lie in the fact that the impetus for the abolishing slavery was an imposition from the British Empire and did not "develop out of the configuration of class forces at the Cape itself"(Ross, 1986, 80). Despite the likeness between the Cape and other colonial slave societies, Cape slavery had an image of mildness, owing to its difference from practices of the New World (e.g. plantation-type, export production, resting on the production of a single crop).

Though agricultural growth at the Cape was more gradual and profitability not as exceptional, there existed a paternalistic relationship on most Cape farms which removed it from the impersonality and regimentation of slave labour on plantations (Ross, 1986). However, "the system of labour control known as Cape slavery, far from being benevolent paternalism was harsh, brutal and bloody" (Ross, 1986, 77). The configuration of agricultural labour relations in the present day has often been closely linked to the perpetuation of this paternalism (du Toit, 1996). The perpetuation of paternalism and wage labour characterised agricultural labour relations in the region, even after the abolition of slavery in 1834. In the context of the Western Cape, current social forms have been shaped by colonialism and slavery. Farm owners thus conceive their "relations to their workers in terms of a discourse of paternalism which described the farm as a family-like community, and which emphasised the master's paternalistic power over the 'child', his servant" (du Toit, 1996, 3). The province was also the site of the earliest capitalist agrarian system, resulting in the proletarianisation of the agricultural labour force. Coupled to this, there were limited opportunities for independent agricultural production in the province. Farm workers were thus dependent on white farm owners for most of their needs, resulting in the creation of a wage labour force with few rights. This dependency has not disappeared in the twentieth century and farm workers,

particularly highly-skilled permanent workers who reside on-farm, still rely on white farm owners for the provision of basic needs.

Another factor in the province's unique historical development, has been the implementation of the Coloured Labour Preferency Policy which prevented farmers from employing black males between 1950 and 1980, thus resulting in a predominant coloured workforce in the region (Goldin, 1987; Hill-Lanz and O'Grady, 1997). Attempts to enforce the movements of blacks into the province through influx control were very difficult to maintain, and the policy was abolished in 1986. Nevertheless, it had left its mark on the character of the province - blacks constitute only 16% of the total labour force on deciduous fruit farms (Kritzinger and Vorster, 1995). It is therefore not surprising that the labour patterns which emerged on Western Cape farms, are indicative of the dominance of the coloured family as the main unit of labour. The 'individualisation' of agricultural labour, observed in many other parts of the country, has not occurred in the Western Cape (Ewert and Hamman, 1996). This is due to the need for a stable workforce in the labour-intensive, export-oriented horticultural industry in the province. The racial profile of workers can be observed on many farms in the Western Cape today.

Mechanisation also had important implications for the agricultural labour force in the province. Mechanisation involves substituting purchased inputs for land and climate, machines for labour and technology for management (Ikerd, 1993, 150). The post-war period of mechanisation observed in agriculture at the global level, also occurred in South Africa. Between 1945 and 1970, investment in farm machinery increased significantly, representing a shift to capital-intensive technologies in the country. At the same time the number of farm workers per 1000 hectares remained constant in the province. Increased mechanisation required a trained, skilled labour force. This resulted in the fortification of the post-emancipation labour stratification pattern, a highly skilled permanent core vs. a low-skilled seasonal periphery. The shift to mechanised agriculture was also aided and abetted by the suite of apartheid-era agricultural legislation. Policies, such as subsidisation of irrigation and pesticide inputs (See Chapter Two), facilitated much of the success of white commercial agriculture. This long trend of conventional (chemically and mechanically-intensive) agriculture in the Western Cape has important implications for the promotion of sustainable agriculture in the province.

The regional specificities outlined here arise from the historical antecedents of the Western Cape. Furthermore, a variety of changes incorporating increased migration, due largely to the abolition of influx control and the Coloured Labour Preference Policy in the 1980s; the increased export capacity of the agricultural sector, particularly in the horticultural industries; and rapid urbanisation have occurred in the province (Thomas, 1995). Within the agricultural sector of the province, several trends have emerged: market liberalisation; expanded growth of horticultural production, deciduous fruit and wine in particular; and an increase in commercial agricultural production (Eckert, 1995). These factors contribute to the relative economic prosperity of the province. In contrast, the position of farm workers in the Western Cape remained largely determined by the Masters and Servants Ordinance implemented after the abolition of slavery. Farm workers did not enjoy many basic conditions of employment, such as a minimum wage, until recent legislative changes (Ewert and Hamman, 1996). Furthermore, the persistence of colonial-era labour patterns on Western Cape farms, the proletarianisation of the agricultural labour force and the long history of capitalist agriculture, has profound implications for land reform and sustainable agriculture in the province.

> Western Cape farm workers, unlike other South African agricultural workers, have no recent history of land access or ownership...This is in direct contrast to the rest of South African agriculture, where share cropping and labour tenancy have existed alongside commercial farming until fairly recently.
>
> (Karaan and Tregurtha, 1996, 51)

Paternalistic relations on Western Cape farms persist and impact on the viability of rural reform today. Relations of production, rooted in paternalism, have led to farm workers continuously being defined in terms of their lack of power. This has a profound impact on the formulation of needs, such as housing, income, electricity and water, for which farm workers are almost entirely dependent upon the farm owner. Many farm workers, for fear of losing their jobs, fail to raise such concerns. Paternalism, by restricting the decisionmaking capacities of farm workers, has significant implications for land reform, in that farm workers are not mobilised to access land reform opportunities. Instead, they are kept in positions of subservience and semi-serfdom.

The proletarianisation of the workforce and limited access to land after apartheid has created an agricultural labour force largely alienated from the land. It thus

explains the lack of a small-holder class in the province and the limitations for rural revolt, premised on land rights. This explains in part, why land redistribution and restitution have not been placed high on the agenda of the province - it also appears to pose too fundamental a challenge to the dominance of white commercial farmers (Interviews, 1997). The dominance of the economically-important commercial agriculture sector in the Western Cape, employing conventional agricultural methods, also present a threat to the promotion of sustainable agriculture. Aside from the adoption of selected agricultural technologies, for example in the wheat and fruit industries (Viljoen, 1992; Rencken, 1997), little has been done to promote and initiate sustainable agricultural initiatives in the province.

Despite these obstacles, which include the perpetuation of paternalism, the dominance of white commercial agriculture, and the racial labour stratification on farms in the province, several social problems prefigure an argument for rural reform in the Western Cape. A lack of housing, tenure insecurity, and the perpetuation of the *'dop'* or *'tot'* system illustrate the impact of agrarian history on the social relations of production in the nineties. Thus, farm workers' social position, places them squarely in the ambit of those deemed to be land reform beneficiaries. In section 5.2., I will explore the main developmental needs of farm workers as articulated in a number of recent research reports dealing with the farm worker question in the province.

## 5.2. FARM WORKERS IN PERSPECTIVE

> Patriarchy and racism are well-documented characteristics of rural areas, but nowhere is authoritarianism and arbitrary power over the lives of people more evident than on farms.
>
> (Hill-Lanz and O'Grady, 1997, 120)

Agriculture in the Western Cape exhibits the impress of particular historical factors. Moreover, the distinctive social relations of production have been shaped by the power relations which exist on Western Cape farms. Social relations on farms display entrenched rural poverty, a race-power dialectic, and the perpetuation of paternalism. Though apartheid has formally ended, the farm has in many ways, remained untouched by the politics of transition as "low wages, dangerous working conditions, poor housing, the absence of the most basic human rights, eviction and physical violence are still prevalent" (du Toit, 1996, 2). The lives of farm workers

during first the colonial and subsequently the apartheid-era in South Africa, were characterised by highly skewed power relations, an absence of decisionmaking powers and in many cases a suppression of all actions perceived to be anti-status quo. In this section, I will examine the impact of the social position of farm workers on the articulation of their needs. Understanding the position of farm workers, key beneficiaries of the land reform programme, is important in outlining their developmental context and in meeting their stated needs. It also provides a context to grasping the needs of the farmers of Warmwater, former farm workers on commercial fruit farms.

Since the elections in 1994, a number of research reports have been published, detailing the socio-economic and political needs of farm workers (Kritzinger and Vorster, 1995; Karaan and Tregurtha, 1996; Reid, 1996; Fast, 1997). The findings of these studies highlight important social, economic and political needs of farm workers in the Western Cape, who constitute the participants in the field research.

Considerable changes, in addition to legislative and labour restructuring processes, have been observed in the Western Cape over the last two decades. In particular, the growth of urban areas, both in the metropole and in the rural areas has resulted in a functionally urbanised population (86.4%) - despite a sizeable *platteland*[4] (Thomas, 1996). Farming areas are generally interpolated with a few large towns and numerous smaller ones. A portion of the agricultural labour force thus live in peri-urban conditions, servicing the commercial farms with a pool of seasonal labour. There are 141 urban settlements in rural Western Cape ranging in population from 119 to 80 000 (Fast, 1997). However, the need for seasonal labour has placed huge demands on the provision of housing and social infrastructure in rural towns, which are largely not met. Thus, the burgeoning of informal settlements on the outskirts of rural towns is becoming a familiar site (See Plate 5.1.). A number of other socio-economic and political considerations, arising from the social structure of Western Cape farms, are discussed below.

Findings of research conducted in ten regions of the deciduous fruit industry indicate that the majority of farming enterprises in the study (106) rely heavily on seasonal labour (Kritzinger and Vorster, 1995). Black workers represent less than 20% of the total labour force on farms and producers generally prefer to maintain

[4] This term, an Afrikaans word, is commonly used to refer to rural areas, in particular farmland.

the status quo of the racial composition of the workforce, despite the availability of black labourers since the abolition of influx control. Reasons given for this preference is that language problems exist between coloured and black farm workers, and farmers regarded blacks as being more likely to instigate strikes and join unions. 63% of the farm owners interviewed used gender as a criterion to select workers and the biggest percentage of seasonal workers were female. Seasonal workers, who work for less than six months, often live in informal settlements, facing conditions of abject poverty during off-season winter. Wage differences between males and females exist due to the shorter working week of women as compared to men, traditional views of men as the breadwinner and the different tasks done by men and women (Kritzinger and Vorster, 1995).

The reasons for these labour patterns are discussed by Hamman (1996). Despite the abolition of influx control in 1986, farm workers in the province constitute mainly a coloured labour force. Levels of racism on farms appear to be high. Wage differences between men and women and the core-periphery (permanent-seasonal) labour structure are couched in cultural stereotypes, where coloured farm workers (permanent) usually perform more skilled work, whereas black (seasonal) workers would do the more repetitive tasks. Women also perform 'lighter' tasks than men. The agricultural labour market is also extremely regionalised (many farm workers are the children of farm workers); males are paid more than females (as one moves closer to the metropole, there is an increase in female wages); payment in kind (housing and other services); and the *dop* system is still in place. These labour patterns have a profound impact on the articulation of a range of farm worker needs, discussed below.

A Rural Foundation study (Karaan and Tregurtha, 1996), largely conducted on wine farms in the province found that 80% of the Western Cape's farm workers are classified as coloured, but that the workforce is fairly equal in terms of gender composition. The average household size was 4.47 and 60% of households consisted of one to five members. The study found that farm dwellers were particularly malnourished and high tuberculosis rates, occupational injury, poor maternal health, alcohol abuse and low birth weight are some of the health problems facing farm workers. A lack of access to health services worsens these issues. Though few studies on the occupational health aspects of farm workers exist, increased focus is being placed on ensuring that safety regulations and the health of farm workers

involved in pesticide application, are prioritised (Barnes, 1995; Pesticide Policy Project, 1997). In the Rural Foundation study, 17% of farm workers lacked adequate sanitation facilities (Plate 5.2.; Plate 5.3.) and the level of literacy was 24.91% (i.e. the number of people over the age of 13 who had completed standard five). There are many constraints to educational opportunities that include a lack of educational facilities, training and skills development and a strong gender bias.

> Illiteracy is perhaps the greatest development obstacle farm workers face, and while illiteracy serves to constrain and restrain the capabilities of farm workers, it also serves as a major barrier to occupational mobility.
> (Karaan and Tregurtha, 1996, 45)

Akin to these needs, there is a huge demand for housing and tenure security in the province. Though the research exercises which were conducted on farm workers in the Western Cape have focused largely on permanent workers, who have access to on-farm housing, many farm workers expressed a desire for off-farm housing. This was particularly true for women on farms, who were granted access to housing provided they had a male relative working on the farm. Should a woman become widowed or end a relationship, she would have to leave the farm (Hill-Lanz and O'Grady, 1997). While tenure security and the need for off-farm housing has been raised as a key concern of permanent farm workers, seasonal workers, living in informal settlements on the outskirts of rural towns, have placed additional demands on the resources of local government institutions in rural areas. The perpetuation of paternalistic and racial labour patterns on farms has not furthered the 'cause' of farm workers. Many farm workers are still largely dependent on employers for access to basic services, especially where they live on-farm. The demand for farm worker housing and permanent employment, ensures the perpetuation of neo-paternalistic management styles. In this way, farm workers remain at the mercy of the farm owner. Although increased participation can be seen on many farms, particularly bigger, export-oriented farms, neo-paternalistic trends, reminiscent of slave-era paternalism, have also been observed. Formal management systems and disciplinary procedures on farms translate into patriarchy in that worker committees do not have decisionmaking powers, with the farmer usually having the last say on key issues such as income and housing (Kritzinger and Vorster, 1995).

Plate 5.1.: Housing conditions in Epukumleni, a low-cost settlement in De Doorns, Western Cape

Plate 5.2.: Five toilets serve the 2000 (mainly) seasonal farm workers living in Epukumleni

Plate 5.3.: Four taps constitute the sum of potable water resources in Epukumleni

Of the range of developmental challenges facing farm workers in the province (Reid, 1996), five key issues indicate the need for land reform. Labour patterns, rooted in the historical configuration of the province, underscores farm worker developmental issues in the Western Cape. The (coloured) permanent core vs. (black) seasonal periphery labour force and wage disparities between men and women, impact heavily on the formulation of rural development strategies in the province. Farm worker concerns also relate to the need for education; health and safety, participation in decisionmaking, off-farm housing, and tenure security. The developmental needs of farm workers, outlined in this section, put forward a cogent argument for social transformation. Processes such as land reform provide opportunities for fundamental restructuring, related to both social transformation (housing, income, education) and agricultural sustainability (farm worker health), of the *platteland*. In spite of the tremendous developmental challenges facing farm workers, a recent study indicate that a large number of farm workers are voicing their desire to engage in independent production (Centre for Rural Legal Studies, 1995). However, the particular configuration of historical forces, such as the establishment of capitalist relations of production and limited opportunities for independent and communal black and coloured agriculture all augment the lack of scope for land reform in the province. For farm workers, the picture looks less bleak.

Farm workers appear to be better mobilised than other land reform beneficiaries to access opportunities for land reform, whether for independent or group production. This is due to the increased level of farm worker organisation, as compared to other potential beneficiaries, for example women. Trade unions in the Western Cape are concentrated in the more profitable areas where worker density is greatest, while a number of farmers' associations have also developed (Interviews, 1997). Identified as one of the beneficiaries of land redistribution, farm workers have a long history of land deprivation, technical knowledge and experience of working a farm enterprise. The commercial agricultural sector in the province has extended its hand to the land reform programme through its participation in FWES schemes. The labour restructuring and participative management styles observed in Western Cape agriculture in the 1980s, foreshadowed this 'openness' to partnership-based land reform models, such as FWES schemes described in Chapter Two. FWES schemes have both advantages and disadvantages and has been promoted in the deciduous fruit industry, believed to be one of the key industries in which land reform successes could be achieved (Conradie *et al.*, 1995; de Klerk, 1996). The case study

in this research, that of the WFT, is based on the farm equity model in which participants are engaged in deciduous fruit production. The potential of the prosperous and growing deciduous fruit industry in creating sustainable agriculture-based livelihoods within land reform projects such as Warmwater in the Western Cape, is discussed below.

## 5.3. THE DECIDUOUS FRUIT INDUSTRY: FERTILE GROUND FOR LAND REFORM?

> The deciduous fruit sector is the largest contributor to agriculture in the Western Cape, producing 25% of agricultural output by using only 1% of agricultural land.
>
> (Kritzinger and Vorster, 1995)

Agricultural production in the Western Cape is prosperous due to a number of factors which include the high growth of agricultural output and employment as compared to the rest of the country; modest growth in farm worker remuneration and high growth in capital investment in farming inputs (Eckert *et al.*, 1996). Deciduous fruit production is a high risk investment, requiring considerable management skills. The Cape fruit industry (Figure 5.2.) is the success story of South African commercial agriculture and exports represent 40% of South Africa's total foreign earnings from agricultural products (Unifruco in Ewert and Hamman, 1996). There is a general opinion that the fruit industry looks promising with the bulk of exports geared for the European market. Despite a long gestation period, as well as high initial capital outlay costs of R 35 000 per hectare, the industry is growing at a fast rate (de Klerk in Ewert and Hamman, 1996). The capital costs of the deciduous fruit industry are dedicated to financing the establishment of orchards and to labour costs. Relative to other agricultural production activities, fruit farmers are not heavily in debt. It is thus mainly due to the deciduous fruit industry that agriculture in the Western Cape has grown so considerably (Bell, 1996). Due to the production of a high value crop, the intensive use of labour, low production requirements and 'new' participatory management initiatives, the 'progressive' deciduous fruit industry has been regarded as providing one of the best options for land reform beneficiaries (Conradie *et al.*, 1995; de Klerk, 1996). The history and characteristics of the industry portend the opportunities for partnership-based land reform in the province.

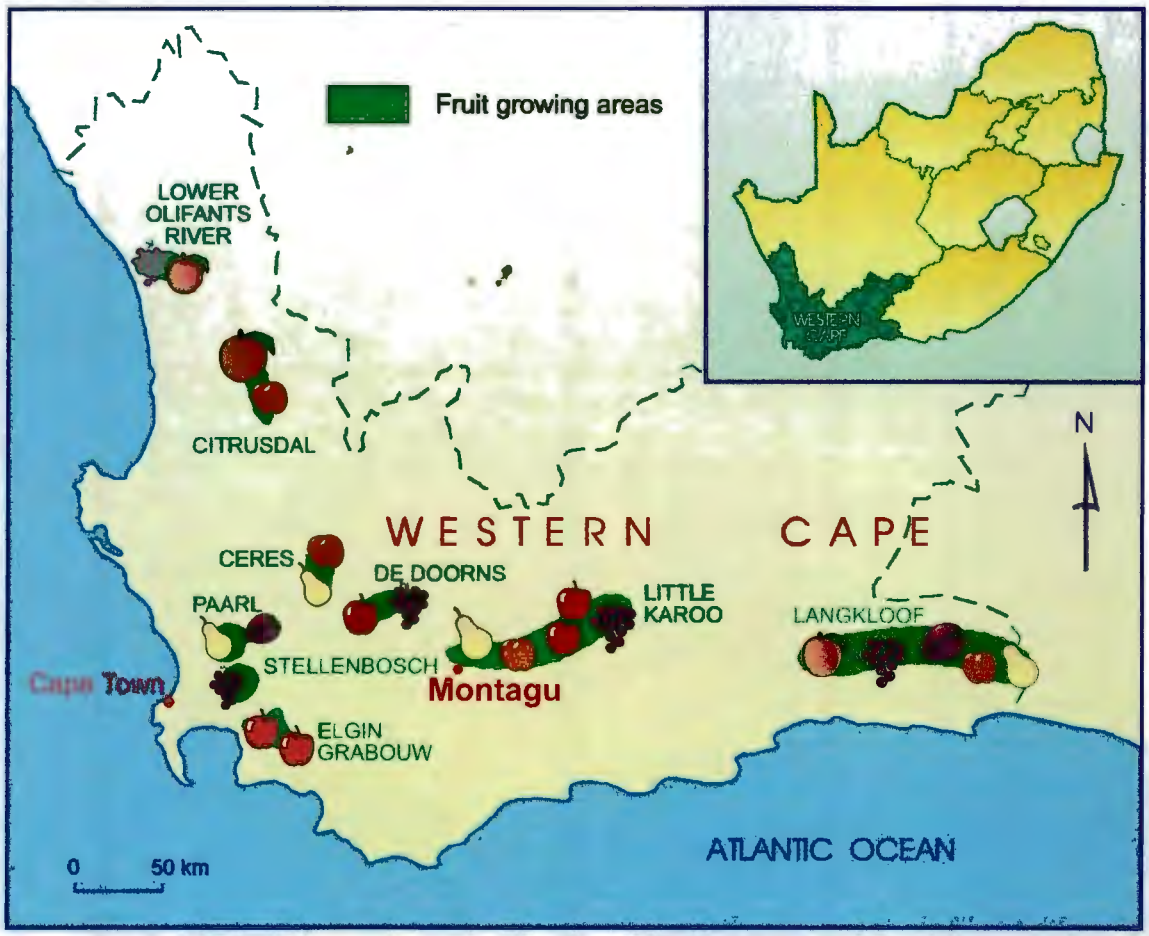


Figure 5.2.: Fruit growing areas in the Western Cape (Adapted from Ewert and Hamman, 1996)

The founding of the export-oriented deciduous fruit industry dates back to Percy Molteno's export of peaches to European markets in 1892 (Bestbier, 1987). Post-World War Two demand and refrigerated shipment provided additional impetus for export-led apple production. But the growth in this industry was not always assured. Despite favourable climatic conditions, sanctions, climatic fluctuations and pest outbreaks threatened many fruit farmers. Evidence, especially from the 1970s, indicate that some producers were facing financial stresses due to crop losses, adverse exchange rates and increased costs. To counter these threats, government subsidisation and marketing assistance greatly influenced the prosperity of the industry. The original marketing board in the fruit industry, the Deciduous Fruit Board, was involved in research, packaging and testing new technology, an essentially 'controlled' form of marketing (Bestbier, 1987). The Board was privatised and replaced by Unifruco (Universal Fru-trade Co-operative) in 1982, marking one of the many changes in the industry (Department of Agriculture, 1994).

Other characteristics of the industry include the establishment of the Rural Foundation, an organisation that worked on issues of social development of farm workers, aimed at improving productivity and the negative image of labour in the face of sanctions (Ewert and Hamman, 1996). Thus, the industry was adapting itself to cushion the effects of sanctions and the boycott of South African export products. By the end of the decade, Unifruco was 'coping' with sanctions (Ewert and Hamman, 1996). Computerised marketing models, inland storage facilities, containerised shipment of fruit and agro-processing were some of the technical changes in the industry (Bestbier, 1987). Other changes included labour restructuring, in which the essentially labour-intensive fruit industry underwent a largely undocumented process of labour restructuring which, according to Ewert and Hamman had

> ...less to do with the political transition in South Africa or the recent extension of labour legislation to agriculture, than with a new competitive orientation on the part of leading farmers and managers in the Cape fruit and wine industry, the sanctions and boycott campaign against South African export goods and the potential 'threat' of the unionisation of farmworkers, which were the major forces behind the restructuring process starting in the early 1980s.
>
> (Ewert and Hamman, 1996, 147)

Labour restructuring in the industry is related to increasing competition, linked to the expanding export market, and the resultant need for a stable, highly-skilled

permanent labour force. To this end, there were calls in the industry to view labour as not only a resource, but to improve working and living conditions, thereby decreasing the need for trade unions (Nel, 1989). A culture of negotiation was seen as the only option to address the threat of unionisation. The industry faced a number of problems, which included inflation, exchange values and interest rates, compounded by sanctions and boycotts against South African export products. These problems spearheaded the restructuring of labour relations. Farmers have a great deal of control over farm workers (housing, wages, employment) and could negate the need for trade unions by adopting management styles which could phase out traditional paternalistic relations of production to more participatory, bottom-up management (Nel, 1989). Thus, in addition to employing farming strategies, such as diversification and expansion, many fruit and wine farms (particularly export-oriented ones), initiated 'pre-emptive' changes in their management style. These changes, observed in the deciduous fruit industry, assisted in the formulation of the notion that the industry is most 'open' to land reform (Conradie *et al.*, 1995; de Klerk, 1996). Yet, land reform opportunities in the deciduous fruit industry are limited by structural underpinnings such as farm labour patterns, grounded in the nature of agriculture of the province.

Writing on labour issues on fruit and wine farms, Ewert and Hamman (1996) have found that there is generally no shortage of labour, but rather an over-supply resulting in the growth of informal settlements in the rural areas, housing mainly seasonal workers. Thus a relatively skilled permanent workforce, usually residing on-farm, contrasts sharply with low-paid seasonal farm workers. While the seasonal labour market shows limited segmentation by race and gender, with some differences between certain areas, the permanent labour force exhibits distinct labour patterns. Blacks have not begun to penetrate the permanent labour force, which is becoming increasingly coloured and female. Farmers employ farm workers' wives, thus doubling the household income without creating any new employment opportunities resulting in a relatively privileged position being assigned to this permanent core of farm workers. This is especially prevalent on export farms where income, social benefits and housing is relatively better than on other farms. Permanent farm workers, particularly on the larger, export-oriented farms are therefore no longer the rural underclass, a "position taken over by the rural poor who live in shanty towns and form part of the seasonal labour market" (Ewert and Hamman, 1996, 157). The partnership-based FWES model, as opposed to

independent small-scale production, has garnered the most interest from commercial farmers in the Western Cape. However, such partnerships usually involve permanent farm workers, thereby excluding seasonal farm workers from the benefits of land reform. Another concern, of a more technical nature, relates to the threats of chemical use in the deciduous fruit industry, to nature and society in the province. This limits the industry's potential to contribute to the creation of a sustainable agriculture-based land reform programme in the province.

Agricultural practices in the Western Cape, particularly related to irrigation and pesticide application, pose serious threats to the water resources of the region (Moolman and Lambrechts, 1996). Irrigation has caused problems such as the salinisation of water resources and in places, environmental damage. Agrochemicals have also polluted water sources. The increase in the salt content, observed in some of the key drainage basins of the region, could lead to soil salinisation which poses a serious threat to agricultural productivity. Land use patterns in the region are mainly determined by climate, soils and the availability of irrigated water - many production types therefore depend on irrigation to supplement precipitation (Moolman and Lambrechts, 1996). The fruit industry is different to other agricultural sectors in that quality control is largely cosmetic (Hallward, 1986). Although conventional farming methods are used for most deciduous fruit production, some farmers are using Integrated Pest Management (IPM). IPM practices include the regulation of pesticide spraying regimes. For example, monitoring the presence of codling moth, an agricultural pest, ensures that farmers only spray when the pests are present (Barnes, 1991). A new job, that of orchard monitor, has also evolved with the increased focus on IPM (Hamman, 1996; *Deciduous Fruit Grower*, 1998). The deciduous fruit industry appears to be the most successful in adopting IPM due to a number of factors which included intensive research, difficulty in controlling pests, sharing of information and good communication channels in the industry. There was pressure to change, a vision of where the change will lead and a means of getting there (Rencken, 1997). IPM involves applying pesticides only when needed, but 100% control of the pest/disease is still constrained by the need to produce unblemished fruit for the market. International pressure, particularly in export-oriented industries, such as fruit, has done much to provide a rationale for the adoption of IPM. The fruit industry has therefore spearheaded the adoption of IPM, but much still needs to be done to address the multiple dimensions of sustainable agricultural development in the

industry.

In terms of land reform objectives, it has been stated by Conradie *et al.* (1995) that Western Cape agriculture should respond in two ways: ownership must become more representative and income must be redistributed to the poor. Preference should therefore be given to settling large numbers of farmers rather than simply changing the ownership of large commercial farms (Conradie *et al.*, 1995). Land reform in the fruit farm setting is important as it is labour-intensive, provides higher value cropping options, and is a growth industry. In their study, Conradie *et al.* say that small-scale apple production, on a 1-2 hectare scale, is suitable for implementation in the Western Cape as it is an important commodity in terms of export earning, has low production requirements and high labour requirements. However, South Africa lacks small-scale fruit farmers and the most likely participants in the small-scale fruit farming sector would be farm workers on commercial farms. In a similar vein, de Klerk has discussed the viability of small-scale pear production (de Klerk, 1996). Both these studies assert the potential of the deciduous fruit industry in providing a viable form of rural and agricultural reconstruction, and the role of farm workers as potential beneficiaries. However, this should involve more than a downscaling of agricultural extension from large-scale commercial to an economically viable small(er)-scale. If Lipton *et al's* (1996) assertions on small-scale farmers' ability to make different crop choices, use land productively for longer parts of the year and use a range of techniques to increase productivity hold true, why the proliferation of essentially partnership-based group production in the Western Cape?

The nature of agriculture in the Western Cape suggests that there are limited opportunities for land reform, predicated on individual production. Racial agricultural labour patterns, the lack of a black and coloured small-holder class, and the long history of white commercial agriculture, discussed in preceding sections, have created a rural elite - permanent farm workers. It is the permanent farm worker who appears to benefit the most from land reform opportunities in the province. Theoretically, the deciduous fruit industry presents an important inroad into small-scale, sustainable agriculture-based land reform. The deciduous industry's involvement in establishing the New Farmers Development company, aimed at broadening access to agriculture, is indicative of its commitment to land reform (Catling and Saaiman, 1996). So, what are the overall prospects for land

reform options, both in the horticulture and other agricultural industries, in the Western Cape?

## 5.4. ASSESSING THE SCOPE FOR LAND REFORM IN THE WESTERN CAPE

> ...the future of land reform in the province is undefined and unclear. What is clear is that land reform must be designed and implemented in an environment in which commercial agriculture is the driving force behind rural employment and rural family welfare.
>
> (Eckert, 1995, 66)

With the advent of political transformation in South Africa, a multitude of policies aimed at land and agrarian reform, have been tabled. Despite initial endorsement of small-scale agriculture, there is still scepticism on its potential in creating increased livelihoods. The view that large farms are more efficient, that land reform beneficiaries lack agricultural and resource management skills, and that small-scale production will increase on-farm consumption at the expense of export, still prevails (Lipton, 1996). In the Western Cape, the strong vested interest of commercial agriculture, and the lack of capacity and political will to implement land reform compound the prospects for reform. The findings of the Western Cape volume of the Rural Livelihoods Research Project, which explores the potential for creating additional livelihoods in the agriculture and rural non-farm sector in South Africa, provides important insights (Lipton *et al.*, 1996). Concerns raised during informal interviews with researchers, development practitioners, communities and government (See Interviews, 1997) on a range of land and agrarian issues also suggest important barriers to the implementation of effective land reform.

In the non-metropolitan context, agriculture provides formal employment opportunities for 38% of the region's economically active population and has grown consistently, primarily due to the expansion of horticultural production (Eckert et al., 1996). Farm employment in the Western Cape grew approximately eighteen times faster than the national all-industry average and while national agricultural employment decreased by 1% annually, Western Cape farm employment grew at 3.3% for all employees (permanent and seasonal) (Eckert et al., 1996). In terms of the macro-economic environment, the Western Cape is particularly profitable. The agricultural production mix has made an important contribution to employment, incomes and foreign exchange. 90% of the horticultural output of the region is for

consumption as fresh fruit and of this, 55% is sold for export (Bell, 1996). Agriculture-based livelihoods thus have an important role to play in land reform processes in the province.

The Western Cape however, exhibits extreme land and income inequalities between white commercial farmers, coloured and black small-scale farmers and growers, and the landless. The Western Cape provincial government also has a different political base than the central government, and a smaller black population (Lipton, Merle, 1996). How does one stimulate growth of a small farming sector with structural underpinnings such as these? Within this context of a dominant and economically important commercial agriculture, important challenges are presented for the introduction of a sustainable agriculture-based land reform programme in the Western Cape.

### 5.4.1. Land reform models in the Western Cape

The Western Cape post-apartheid government has no significant record of increasing land access to marginalised groups (Interviews, 1997). However, the agrarian history of the province has highlighted the obstacles for independent agricultural production. These include a lack of management skills, high initial capital outlay costs (land, equipment), lack of access to finance, and the difficulty of motivating people to farm. It is therefore likely that better skilled and organised farm workers will benefit more from land reform (de Klerk, 1996; Karaan and Tregurtha, 1996).

According to Catling and Saaiman (1996), there are basically four land reform options in the Western Cape: new (individual) entrants to commercial agriculture which will require considerable financial assistance from the state. This is likely to involve small-scale independent production, which will require the re-orientation of agricultural support services, geared towards commercial farmers, in the province. Share equity and joint venture schemes entail partnerships with the private sector or a commercial farmer. It involves partnerships on existing ventures, as well as new ventures. Permanent farm workers have been the primary beneficiaries of this model, for example Whitehall (a deciduous fruit farm) and Nelson's Creek (a wine farm) (Davis, 1994; McLennan, 1998). Subsistence and market gardening with an emphasis on household food security; forms the third

option for land reform in the province. This has enormous scope in providing both food security and income-generating benefits to food gardeners (Karaan and Mohamed, 1998). The fourth land reform option, farming in the coloured rural areas (CRA's) and church-owned land (mission settlements), prioritises issues of tenure security. The land reform options of small-scale agriculture and FWES schemes will be investigated to highlight the opportunities for farm workers in the province.

Agriculture in the Western Cape, as in the rest of South Africa is dominated by the commercial sector. 9000 well-organised (white) commercial farmers contrast with the less than 20 000 rural households who are engaged in small-scale, often subsistence agriculture (Catling and Saaiman, 1996). Small-scale farming in the mission settlements and former CRA's of the province, as well as burgeoning urban and peri-urban agricultural projects, centring largely on food gardens and livestock farming, dominate black and coloured agricultural activities. A small-scale farmer and grower can be defined as a "historically disadvantaged individual or group having access to land which normally supports a small or medium agricultural enterprise"(Catling and Saaiman, 1996, 160). Farmers in the CRA's and on mission land, to a large extent, constitute the small-scale farmer class in the province. There are 12 CRA's and 5 mission stations in the Western Cape. In most of these areas, a communal land tenure system exists. Overcrowding, insecure tenure, a lack of employment opportunities, agricultural support services and social amenities, exist in the CRA's. Small farmers on other lands in rural areas include those farming on municipal land, while urban and peri-urban home gardeners can be found in many rural towns and informal settlements (Catling and Saaiman, 1996).

Since 1994 there has been little assistance to small-scale farmers and growers and their specific needs include finance and credit, access to land and tenure security, water for livestock and irrigation, training, extension and support services (Interviews, 1997). Some changes have been made to close the gap, such as small farmer-oriented research in the Department of Agriculture and the Agricultural Research Council; the initiation of the Interim Committee for small-scale farmers in the Western Cape; research at universities; the role of NGOs and private institutions, for example Abalimi Bezekaya, Centre for Sustainable Agriculture, New Farmers Development Company, Land Development Unit and LANOK (Catling and Saaiman, 1996). Researchers are also beginning to propose alternative models for

independent small-scale production, primarily in the deciduous fruit industry (Conradie *et al.,* 1995; de Klerk, 1996).

The lack of existing models for small-scale fruit farming in South Africa, have resulted in researchers downscaling large-scale models, in addition to drawing on lessons from overseas (Conradie *et al.*, 1995; de Klerk, 1996). The socio-economic characteristics of small-scale fruit farmers are said to include: individuals or groups who had previously been barred from owning land; the use of the Department of Land Affairs settlement grant and income as capital; the employment of household labour sources; and the importation of skills and experience of fruit production (de Klerk, 1996). de Klerk states that "existing or former commercial farm employees...[form] the largest pool of potential small-scale deciduous fruit farmers in the Western Cape" (de Klerk, 1996, 206). He concludes that independent small-scale horticultural production, either in the form of outgrowers or in the subdivision of existing land, presents an opportunity for land reform which should not be missed. While farm workers form the primary targets of small-scale agriculture, seasonal farm workers, mission settlement and peri-urban dwellers, also constitute important target groups for land reform in the Western Cape. In addition to horticulture-based small scale agriculture, livelihood opportunities have been investigated in other sectors which include wheat, field crops (rooibos, fynbos), and livestock, such as poultry and aquaculture (Eckert, 1996; Eckert and Viljoen, 1996; Mohamed and Dodson, 1998). Another land reform model, that of partnerships with the private sector (implemented in the Warmwater case study), has also been promoted for implementation in the Western Cape. These incorporate a range of approaches, such as FWES schemes, share block schemes (where individuals own a unit of the enterprise), lease and buy schemes, contract farming, develop, operate and transfer schemes, and agro-processing concerns (McKenzie, 1996). Partnership-based approaches to land reform could therefore incorporate individual production (share block schemes) and need not be limited to group production (FWES).

Of the four land reform options outlined by Catling and Saaiman (1996), and contrary to the small farmer path, the model implemented most frequently has been the FWES scheme. At the national level, 36% of the schemes established thus far are located in the Western Cape province (Table 5.1.) (Rankin, 1998). Of the 83 land redistribution projects in the Western Cape, 11 are farm equity share schemes

(13%) (Rankin, 1998).

| Province | Number of farm worker equity schemes | Percentage (%) |
|---|---|---|
| Western Cape | 10 | 36 |
| Mpumalanga | 5 | 18 |
| Free State | 4 | 14 |
| Eastern Cape | 4 | 14 |
| Northern Cape | 2 | 7 |
| Gauteng | 1 | 3 |
| North West | 1 | 3 |
| Northern Province | 1 | 3 |
| KwaZulu Natal | - | - |
| TOTAL | 28 | 100 |

Table 5.1.: Farm worker equity share schemes as at 1 September 1998 (Rankin, 1998).

A partnership approach can be defined "as an arrangement which combines the expertise and capital of established agricultural interests with the resources available to previously excluded groups who wish to enter into farming ventures" (McKenzie, 1996, 296). The Whitehall farm, a deciduous fruit farm in the Grabouw area has been operating as a FWES scheme in which farm workers have 50% share in the farm. The FWES model has been spearheaded by medium-sized family farms in the fruit industry, where permanent, mostly coloured workers acquire shares with capital obtained from the Department of Land Affairs and/or borrowed from an independent development agency or commercial bank (Hamman, 1996). While de Klerk (1996) does not regard FWES schemes as a form of independent smallholder production, McKenzie (1996) states that such partnership approaches, from a fiscal point of view, could prove to be more effective by utilising the resources of the private sector. There are many advantages of the equity approach which include an increase in total income, a stake in ownership and decisionmaking, increased security of tenure and capital accumulation -but there is no new employment as primary participants are usually permanent farm workers.

Criticism have been levelled at FWES schemes owing to its selection procedures. Participation in FWES schemes currently inhibited women from benefiting because of their insecure position on farms, outlined in Section 5.2. (See also Hill-Lanz and O'Grady, 1997). This is also the case with seasonal and black farm workers. So, if more than the present handful of farmers were to choose the FWES scheme route, a

firm alliance between white farm owners and (male) coloured farm workers could emerge on Western Cape farms, thus forging a deeper segmentation of the rural labour market along coloured-black and permanent-seasonal lines (Ewert and Hamman, 1996). This 'co-operative coalition' could ensure that the now-abolished Coloured Labour Preferency Policy remains a *de facto*, rather than a *de jure* institution in the Western Cape. For a detailed discussion of the FWES model, see Section 2.2., Chapter Two.

The increase in farm worker committees, participatory management and the role of trade unions, especially on some of the bigger farms in the fruit industry, denotes the seemingly favourable bases which exist for the implementation of FWES schemes in the region. The promotion of the dominant tendency of obtaining land at market value, is evident in the Western Cape, as interviews with key informants revealed (Interviews, 1997). Scaling down capitalist farms to a minimum viable enterprise and identifying the most skilled sector of permanent workers on large farms and entrepreneurs as likely beneficiaries of land reform, does not support the rural poor who are in need of post-apartheid justice. This down-scaling of large-scale commercial agricultural enterprises are seen as antithetical to the Liptonian premise that land redistribution is a condition of the small farmer path in South Africa (Bernstein, 1997). Financial deregulation and private finance initiatives in the form of FWES schemes, are also unlikely to benefit the majority of the rural poor in the province. Although FWES schemes are an important part of land reform, very few other models are receiving serious consideration (Bonti-Akomah, 1998).

The Western Cape, won by the National Party (NP) in the provincial legislature, exhibits local dynamics unique to the province. The close alliance between the NP and commercial farmers have ensured that rural livelihood opportunities are still blocked by functionaries acting in the interest of commercial agriculture, resulting in tension between tiers of government (national, provincial, local), particularly related to the implementation of land and agrarian reform policies. In rural areas, local government restructuring has provided little hope for change (Fife, 1996). Weakened by a lack of rural civil society, and the threat of the continuation of paternalism, farm worker organisation is still largely left to the farmer. Interviews conducted with 22 key informants in the Western Cape (Appendix A), generally echo similar concerns on the trajectory of land reform in the Western Cape.

Interviews with key informants in the province revealed that land reform issues in the Western Cape relate primarily to ensuring security of tenure, and specifically housing security (Interviews, 1997). The reason for this according to some respondents is threefold. Firstly, there is very little history of recent dispossession in the rural areas of the Western Cape and wage labour is a centuries-old practice (See Section 5.1). There is thus not many claims to land in the province. Secondly, the political will to implement land reform in this province is questioned, with a conservative NP-led provincial administration. Thirdly, commercial agriculture in the Western Cape is well established and it is very difficult to gain access to this capital-intensive sector. The only way, according to the majority of interviewees, to gain access to agriculture in the Western Cape, besides subsistence agriculture, is through borrowing or participating in FWES schemes. For most applicants to the land reform programme, bureaucratic processes have proved to be very tedious and many individuals and groups are experiencing great difficulty in accessing land, due to financial and administrative constraints. In general, the interviewees felt that land reform involving agricultural production would have the least impact in the Western Cape for the reasons stated above. Interviewees concurred that the FWES model, spearheaded by the deciduous fruit industry, was the most 'open' to land reform. Farm workers would also be the primary beneficiaries in such schemes. The needs of small farmers, confined largely to the mission settlements and CRA's, which constitute less than 5% of the province's population, would be met through tenure security and not land restitution or redistribution processes. Thus, there is a dearth of opportunity for agricultural activity within land reform in the Western Cape. The challenges for sustainable agriculture-based livelihoods within the context of land reform, are even greater.

### 5.4.2. Sustainable agriculture and land reform in the Western Cape

The dominance of commercial agriculture, employing conventional, chemically-oriented practices, does not bode well for the institution of sustainable farming systems in the context of land reform in the Western Cape. However, the promotion of sustainable agriculture, one of the key aims of the Department of Agriculture, does not receive adequate support from government (Interviews, 1997). There are not many practical examples or field tests of sustainable agricultural methodologies in the Western Cape, aside from the Centre for Sustainable Agriculture, the Bloublommetjieskloof biodynamic farm and some organic vegetable producers in

the province. Though there is an interest in and concern over environmental issues, there is some scepticism with regard to the environmental consequences of agriculture as "other sectors of human activity such as industry are actually more harmful to the environment than agriculture" (Interviews, 1997). Some of the interviewees also felt that the middle route to sustainable agriculture, which they saw as low external input sustainable agriculture (LEISA) (described in Chapter Three), was the best route to follow as many people entering agriculture would not willingly decide to follow more environmentally-friendly methods. The view that sustainable agriculture implies decreased productivity relates strongly to the negative perceptions of sustainable agriculture that exists in South Africa (Urquhart, 1997). The approach to promoting sustainable agriculture, according to a number of interviewees, has to be more holistic, focus on integrated management and particularly on farmer participation (Interviews, 1997). The interviews also highlighted the main areas of agriculture in which work on sustainable agriculture was being done in the province. Alternative approaches to agriculture include the adoption of IPM, the promotion of organic peri-urban agriculture and farmer-based land management (Interviews, 1997). The general feeling among interviewees was the need for more research into sustainable agriculture. However, it was clear that undertaking research on sustainable agriculture, within a dominant commercial agricultural context would not be easy.

Despite the limitations of irrigation-based livelihood creation in the Western Cape land reform process (Moolman and Lambrechts, 1996), the sustainable agriculture-land reform linkages have not been made in the debates on land in the province. Haphazard policy development, the lack of inter-departmental collaboration on land and agricultural issues and a dearth of well-researched, established examples of sustainable farming systems, impede small scale sustainable agricultural development in South Africa (Urquhart, 1997). The same criticism can be applied to the Western Cape. The negative perception of some of the interviews towards sustainable agriculture confirmed my concerns that the commercial agriculture sector, of which the WFT is an example, still had a long road to travel towards sustainable agriculture. Though initial steps, such as the adoption of IPM and health and safety issues have been taken in the agricultural sector, an input-substitution approach would fail to address the fundamental principles required for sustainable agricultural development.

The interviews with key informants in the province (Interviews, 1997) echo many of the issues raised in preceding sections, and grounded the theoretical criticisms of land reform in the province. Though land reform policy and labour legislation has created a framework in which the basic relationships of paternalist power can be challenged (du Toit, 1996), farm workers' awareness of these rights and opportunities need to be assessed. The increasing financial crises (high interest rates and exchange values) make entry into agriculture increasingly difficult. The FWES model, despite the limitations of its reach into the heart of poverty in the province, appears to be gaining favour and does represent *one* option to acquire land. However, there are concerns that at present, they represent the *only* viable option to aspirant farmers in the province. Thus rather than being viewed in a favourable light, one community regarded it as a cop-out of real reform, while an agricultural economist called it 'forced collectivisation'. These are real concerns, as the only way to access land for commercial agricultural production would be through group farming, adding the complex dimension of group dynamics to decisionmaking processes. Little attempt is also being made to address sustainability, in a holistic sense, despite its centrality in land reform and agricultural policies. Thus, the concepts and practices of sustainable agriculture strategies needs to be introduced at a range of different scales and at various project development stages (Interviews, 1997).

In the following chapters, I will be investigating the potential of an on-farm participatory monitoring process in monitoring environmental and social change on Warmwater, a land reform project in the Western Cape. Researchers have begun to advocate a greater emphasis on employing participatory research methods in land reform and rural development research (du Toit, 1996; Levin and Weiner, 1997), emphasising "...the powerful potential of a participatory approach, and its part in 'holding a space' in which marginalised and silenced voices can be heard" (du Toit, 1996, 12). The WFT, a deciduous fruit farm established in 1996, is located in the Montagu district of the Western Cape province. Currently, 15 households are settled on the farm. Background information on the Montagu district, presented in Section 5.5., further informs the understanding of the structural underpinnings of agriculture in the Western Cape. Patriarchy, the racial-power dimension of the agricultural labour force, a politically-conservative provincial authority, and the dominance of the economically important horticultural industry, underscore the quest for sustainable agriculture-based land reform in the Western Cape.

Understanding the impress of Western Cape specificities on the farmers of the WFT, is thus explored further in Chapter Six.

## 5.5. THE MONTAGU DISTRICT: LOCATION OF THE CASE STUDY

The natural environment of the Western Cape, primarily a winter rainfall area, is characterised by pronounced mountain ranges which has created a multitude of physical land forms, ranging from extensive upland plains to valleys. The climate is Mediterranean and 80% of the rain falls between April and September. Though there are several drainage basins, low runoff coefficients and high evaporation rates result in dry summers – thus irrigated agriculture dominates. Many poor agricultural practices have damaged soil and water resources. Irrigation methods in particular have resulted in high salt content. Consequently, the "growth in irrigated agriculture as a means to create additional livelihoods in the Western Cape will be greatly influenced by the availability of water resources" (Moolman and Lambrechts, 1996, 127). The economic geography of the province shows a high level of urbanisation with 94% of the population functionally urbanised (Thomas, 1996). *Platteland* settlement patterns include rural villages (former mission settlements), fishing villages; smaller towns; and large platteland towns which often relate to the linkage effects of agriculture. Average district growth rates indicate an increase in employment levels in the metropolitan area and a shift in investment to rural areas. Thus, rural areas should utilise resources to initiate integrated development planning (Thomas, 1996). The prosperity of agriculture in the region, noted above, is largely due to the growth of horticultural production.

### 5.5.1. A description of Montagu

The Warmwater Farming Trust is located approximately 30 kilometres from the town of Montagu (Figure 5.1.). The town was formally established on the farm Uitvlugt in 1851 (Hofmeyer, 1986), but the original occupants of the Montagu area (part of the Agtercogmanskloof) were Khoisan herders and hunter-gatherers (Japha *et al.*, 1990). Land use in the mid-eighteenth century was primarily grazing, and the area was later used for intensive farming due to the favourable agro-ecological conditions and government subsidisation. In addition to primary agricultural production and the processing of wine, brandy and dried fruit, the area was also a

commercial and religious centre for the Little Karoo region (Japha *et al.*, 1990). Named after the British Secretary of the Cape Colony at the time, John Montagu, the town lies between the Keisie and Kingna rivers while the agricultural areas have expanded considerably through the centuries (Hofmeyer, 1986).

Montagu is located in the Breede River Region of the Western Cape Province[5]. It has a temperate climate, with a mean temperature of 17.6°C while the average temperatures in January is 31.2°C and in June 4°C. The area falls within the winter rainfall region and is often cited for its unique location on the border of the Boland and Little Karoo, the temperate and semi-arid regions of the Western Cape. The average rainfall of the area is 318 millimetres. One of the most striking features of the area is the mountains which encase the area. The 1:5 gradient of the rivers and slopes inhibit the development of urban areas, as well as the expansion of arable agriculture. The physical structure or land form of Montagu, though exceptionally picturesque, also contributed to the damage caused by the floods of 1981 which affected the town area, as well as surrounding farms. One of the key tourist attractions, aside from the rich architectural heritage of Montagu, is the hot springs (mineral pools), as well as the rapid expansion of farm and ecotourism facilities. Studies detailing the architectural riches of Montagu (Japha *et al.*, 1990; Japha *et al.*, 1992), have drawn up a conservation plan for one of the most important historical towns in South Africa.

The estimated population figure, as provided by the Montagu Town Clerk is 5 200 coloured, approximately 18 black (sic) and 3000 whites (9000 total), representing a 4 to 6% population growth from the pre-election figure of 8200. However, the black population is questionable as informal settlement dwellers clearly have not been factored in. The development of the town is not very different from much of South Africa, with the suburb housing coloured residents of Montagu separate from the white suburb. On-farm housing is generally provided due to the long distances between the town and some of the more remote farms. A hospital, as well as a high

[5] During an initial visit to Montagu, I met with an agricultural fieldworker at the MAG Training Centre. MAG is a business service centre for rural entrepreneurs and aims to create opportunities for "the development of socio-economic skills that will lead to greater self sufficiency and human dignity in rural areas" (MAG, no date). The fieldworker had assisted a Cape Town-based non governmental organisation, the Foundation for Contemporary Research (FCR). in collecting information on the Montagu and Ashton areas (population, agricultural potential, climate) and referred me to this organisation. The report which was produced, a local economic development report, provides much of the foundation for this background section on Montagu (Foundation for Contemporary Research, 1998).

school and three primary schools can be found in Montagu. There are eight farm schools in the Montagu area. These are primary schools and are administered by the provincial Education Department. A lack of running water, the use of the pit latrine system, a lack of integration of the various race groups and the long distances many pupils have to walk each day (2 - 10km), all point to bad conditions on many of these schools which form an important resource for the children of farm workers. Adult education facilities are located in Ashton and focus largely on community development issues, such as educational development. Montagu's health needs are serviced by three clinics and one hospital. Some of the key problems relating to developmental criteria are the segregated population distribution, the unequal distribution of public facilities and the perpetuation of apartheid planning principles.

Agricultural employment in the Western Cape has grown consistently from 1980, but this growth is largely attributed to the expansion to labour-intensive horticultural production. Within the province, the Worcester, Ceres, Tulbagh, Robertson and Montagu districts dominate the horticultural production output of the Western Cape (Eckert *et al.*, 1996) (See Figure 5.1.). There are 228 productive farms in Montagu covering 228km$^2$. Deciduous fruit production is the dominant agricultural production activity. Other production activities include dairy and cattle farming. Secondary agricultural activities, which include canning and fruit processing are located in Ashton and surrounding towns. Agriculture in Montagu is dominated by white commercial farmers, but small-scale agricultural production is practised to a lesser degree.

Small-scale agricultural activities in Montagu can be largely confined to the activities of MAG. Under its agricultural empowerment programme in 1987, the farm Goudmyn was purchased and prospective small-scale farmers were selected from the Montagu-Ashton areas to participate in the project. Although some success has been achieved with figs and apricots, inadequately defined institutional relationships - in relation to financial issues, support services and tenure security are key factors in the slow progress made by the farm. Interestingly, one of the agricultural development workers on the farm had attempted to introduce low external-input sustainable agriculture. Even though a number of trials were carried out with small farm technologies such as nitrogen-fixing perennials and hand operated ploughs, nothing came of these trials, possibly due to continuing lack of

resolving institutional questions (Cousins *et al.*, 1996). Other agricultural activities, aimed at previously disenfranchised communities are the Ashton Small Farmers Association (cattle farming on 15 hectare municipal land); Montagu and Ashton garden plots (municipal and private land respectively); Montagu Development Trust (80 hectare multi-purpose centre) and the Warmwater Farming Trust, the case study component of my thesis.

Development in the Breede River Region, of which Montagu is a part, has been influenced by the notion of rural town clusters, in which a range rural towns develop their distinctive resources, production or service specialisations, thus concentrating on integrating resources spatially (Thomas, 1996). The cluster recommended in this area consists of Robertson, Ashton, Bonnievale and Montagu (See Figure 5.1.) with the primary economic activities being fruit production, wine production, agro-processing and tourism. The roles of various towns in the cluster are however fundamentally different. For example, Montagu is located on the edge of the district and has traditionally fulfilled a service-providing role to the agricultural areas in the Little Karoo. Although its development into a major agricultural regional centre was limited by a lack of access to the railway line, Montagu plays an important role in agricultural production and tourism. Nearby Ashton is largely related to the rail route, but despite subsequent development of agricultural processing plants in Ashton, and its contribution to providing employment opportunities for both Robertson and Montagu, agro-industrial development was not accompanied by the development of commercial and service infrastructure. There would thus need to be efforts to stimulate the 'strengths' of these areas which include fruit production, wine production, agro-processing and tourism leading to benefits such as joint utilisation of improved infrastructure, marketing, establishing tertiary training facilities and combining production capacities (Thomas, 1996). However, in order to create dynamic town clusters, a good working relationship needs to be established between the various local councils - an issue which yielded contradictory perceptions. An Integrated Development Plan (IDP) for the rural town cluster, incorporating Robertson, Ashton, Bonnievale and Montagu is being planned, and the FCR study has recommended that this process should ensure greater community liaison; bolster key socio-economic development initiatives; draw up a People's Budget to ensure prioritisation of basic service provision and enhance public participation once the IDP has been initiated.

The WFT is thus located in a region of extreme economic, environmental and political significance. Montagu forms part of the region with the highest horticultural output of the Western Cape, it has an extremely rich cultural and natural environmental heritage, and appears to exhibit much of the political conservatism, characteristic of the apartheid era. However, Montagu has not remain unaffected by the climate of change which pervades the country. The activities of organisations like MAG and the initiation of the Warmwater Farming Trust signify important inroads into one of the edifices of the apartheid-era, commercial farms. The key obstacles, including theoretical and practical issues encountered in this research, are delineated below.

### 5.5.2. Some obstacles to the research

As described in the Section 5.4., the largest number of FWES schemes has been initiated in the Western Cape province. As a land reform model, FWES schemes merit further investigation. My contact with the project participants, the farmers of Warmwater, afforded me the opportunity to begin to assess the transformative and empowerment abilities of this land reform model. In addition, much of the assumptions which I had made in formulating a vision for sustainable agricultural development, appeared to be largely in conflict with commercial agricultural production in South Africa at present. Notable changes, such as the adoption of IPM, particularly in the export-oriented deciduous fruit industry of the Western Cape, though largely economically-motivated, indicates some willingness on the part of this industry to explore alternative farming strategies. However, these appear to be limited to strategies which improve competition on the increasingly environmentally-aware international market.

The WFT, having been established in 1996 on the basis of the FWES model, had completed two production cycles by February 1997 and thus presented an ideal case study as agricultural production was in full swing. Commercial deciduous fruit production, the agricultural sector of the Western Cape noted for its 'progressive' labour practices and contribution to the provincial economy, also has an 'openness' to land reform, not witnessed in other industries. This research therefore presented an opportunity to examine the FWES model by assessing the levels of commitment to agricultural sustainability, community empowerment and participation in decisionmaking on Warmwater. In confronting my own biases, this case study

proved extremely challenging as the agricultural practices employed are largely heavy-input, conventionally oriented (pesticides, fertilisers, machines) and appeared to epitomise an unsustainable agriculture system. Another issue of concern to me was that the beneficiaries of this project represented a more privileged section of the Western Cape rural population, permanent farm workers, and were thus not representing the poorest sectors of society, the seasonal labourer force. Though I was initially concerned with working on a FWES scheme, due to its limitations of reaching a broader base of participants, the growing establishment of such schemes requires that both the advantages and disadvantages of this model be understood. My confrontation with these biases, as well as some of the assumptions implicit in my approach are outlined in the chronicles of my interaction with the farmers of the WFT (See Appendix A). A substantial amount of travelling was undertaken to conduct the field research. However, the seasonal nature of fruit production, leaving a 'quieter' winter season provided an opportunity to conduct fieldwork with the farmers without infringing on their activities and work commitments.

This chapter described the structural underpinnings for the promotion of sustainable agriculture-based land reform in the Western Cape. A political economy analysis, employing historical analyses, provided invaluable insights into the nature of the agrarian economy and its impact on the configuration of present-day land and agrarian questions in South Africa (See Chapter Two). This chapter has highlighted the forces at play in understanding the WFT, located in the Western Cape. In the Western Cape, colonial and apartheid-era policies and practices have led to the proletarianisation of the agricultural labour force, the establishment of racial labour patterns, and the dominance of white commercial agriculture. The long history of wage labour on commercial farms has impacted profoundly on the paucity of land reform opportunities in the province. In addition, the dominance of conventional commercial agriculture has left little room for sustainable agricultural development in the province. Reflecting this agrarian history, the farmers of Warmwater, former farm workers, do not have recent links to land. Instead, many of the farmers have worked on commercial farms for generations and were exposed to the paternalistic, tyrannical rule of the majority of white commercial farmers in the province. In stark contrast to the existence of the unjust relations of production observed on Western Cape farms, fruit farmers in the region represent the economic success story of South African agriculture.

The prosperous horticultural industry, said to be most 'open' to land reform has been mooted as one of the industries in which land reform opportunities exists. The industry is labour-intensive, high growth and export-oriented - thus presenting many benefits for prospective commercial farmers. Yet, aside from IPM, little has been done to develop more sustainable production systems in the industry. Also, few models of small-scale fruit production exist.

The highly-skilled farm workers working on fruit farms have been identified as key participants in land reform. The social position of farm workers as well as the high incidence of poverty in the *platteland* merits that farm workers be earmarked as land reform beneficiaries. However, limited opportunities for independent small-scale agriculture have contributed to the popularisation of large-scale, partnership-based approaches to land reform. FWES schemes, a partnership-based land reform model, has gained favour in the province. The WFT was constituted on such a model. Although it occupies an important place in land reform, FWES schemes appear to be dominating land reform in the province. The competitive, capital-intensive horticulture industry has entered into partnerships with farm workers, thereby facilitating access to land for agricultural production, a goal which is unattainable to the majority of aspirant farmers in the Western Cape.

The role of FWES schemes, in creating sustainable agriculture-based land reform in the province, therefore requires further investigation. In particular, the transformative effects of the FWES model, related to both social change and agricultural sustainability was considered in the field research conducted with the farmers of Warmwater. The remainder of this thesis deals with the research conducted with the Warmwater Farming Trust. It elucidates the lessons learnt from the participatory monitoring process initiated on the farm, and locates the research findings of the locale within the broader structural forces operating at a number of levels, from the Western Cape to the global arena.

# - CHAPTER SIX -

# INDICATORS FOR SUSTAINABLE AGRICULTURE: THE WARMWATER FARMING TRUST

> There are many 'characters' on Warmwater, goodies and baddies, strong ones and weak ones, but most of them have one thing in common...in order to have survived the years of apartheid and farm labour, they had to break rules. Some of them broke rules all the time. This informal breaking of rules, sometimes made cowboys out of them, and they learnt not to cry...
>
> (Gaugler, 1997, 1)

My initial contact with the Warmwater Farming Trust (WFT) was in March 1998, after which I attended several formal and informal meetings on the farm. At these meetings, a range of farm-related issues, including this research, were discussed (See Appendix A for a schedule of the research conducted on Warmwater). These opportunities informed my understanding of the issues and concerns of Warmwater and enhanced my perception of farm worker equity share (FWES) schemes, the land reform model employed on the farm. I completed a summary of my research for the trustees of the farm and at two subsequent meetings with the WFT, presented my research concept and aims to the farmers. During the short presentation which I gave to the group, I spoke briefly about sustainability and the use of indicators as a monitoring tool which could form a part of broader farm management. Support for the research was secured as farmers felt that testing their own progress would greatly assist them in assessing where they were moving towards, as well as picking up problems. The timing of my research also coincided with a period on the farm in which investigations were being undertaken into various natural resource issues (soil, water, trees) and all indications were that farmers were interested, as well as curious about the research which I wanted to conduct. Thus my involvement with the farmers of Nuwe Begin ('New Beginnings'), began.

The field research conducted with the WFT was conducted during the winter months, May to August 1998. Contact with the WFT was established in March 1998 and the research exercises which involved the generation of indicators of agricultural sustainability was initiated in May 1998. Although I am currently involved in the promotion and development of a monitoring system on the farm, the main issues which will be discussed in this chapter will be the generation of

background information on the farm; the main research findings and the way forward. The fieldwork component of my research dealt largely with the farmers who were resident on the farm, while interviews on the history, main concerns and future of the WFT were also held with Sighardt Gaugler and Chris Crossley, members of the Warmwater trust body. The interviews, a range of reports on the farm and discussion with the farmers form the basis of the farm background. In addition, a timeline (Table 6.1.) detailing the history of the farm, which was conducted as an introductory exercise in the fieldwork dealing with sustainability indicators, is included in describing the history of the farm.

## 6.1. THE WARMWATER FARMING TRUST

### 6.1.1. The past and present of the Warmwater Farming Trust

On 27 April 1994, a group of farm workers in the Western Cape were given the first real opportunity to see their hopes of obtaining land for agricultural purposes realised. From that day, the idea of establishing a company was formulated by some of the farm workers (Isaacs and Magobolo, 1995). With the assistance of the then farm manager, Sighardt Gaugler, as well as a law firm, steps were initiated to form a company. These included 'farmers' attending courses on business management, stipulating the value of shares and finally registering the company in 1995. During this period, the group started discussing the viability of purchasing land and approached firstly, the Development Bank of Southern Africa and subsequently New Farmers Development Company (See Timeline, Table 6.1.). Both these institutions were known to be supportive of the farm equity share model, and specifically of partnerships between farm workers and commercial farmers. The group was interested in obtaining a fruit farm, as most of them had been working on fruit farms all their lives. The owner of Killarney, where many of the members of Nuwe Begin were working, wanted to sell his farm, but commanded an exorbitantly high price. Subsequently, two other farms in Montagu were considered: De Hoop and Warmwater. A study investigating the viability of the two farms were commissioned by New Farmers, and Warmwater was identified as the better option (van Zyl, 1996). Some of the members of Nuwe Begin had worked on the farm and were therefore familiar with the conditions. While New Farmers were putting the proposal to their investors, Nuwe Begin's members applied to the Department of

Land Affairs for the settlement grant of R 15 000 per household. In the meantime, New Farmers had also purchased Verlorenvlei, a deciduous fruit farm where some of Nuwe Begin's members went to work in mid-1996. In November 1996, fifteen households moved onto the farm Warmwater, a few weeks before the 1996/1997 harvest commenced.

Located in the Montagu district (Figure 6.1.), the Warmwater Farming Trust (WFT), was formally constituted in November 1996 and consists of three partners - the company Nuwe Begin Boerdery (Pty) Limited (Nuwe Begin), an investment company New Farmers Development Company Limited (New Farmers) and Sighardt Gaugler (Department of Land Affairs, 1997b). Sighardt Gaugler was the farm manager at Killarney and supported the objectives of Nuwe Begin members, many of whom were farm workers on Killarney, to access land for agriculture. New Farmers, which was established in 1995 by Unifruco, in conjunction with other private sector companies, such as financial and agricultural marketing institutions, aims "to create opportunities for viable farming enterprises, focusing on developing communities, through project development, loan finance and equity participation" (New Farmers, 1996, 5). The primary objectives of New Farmers are to broaden the ownership base in agriculture and to integrate clients from developing communities into the mainstream of commercial agriculture.

Nuwe Begin consists of 35 shareholders, representing 32 farm worker households. While fifteen households lived on the farm Warmwater, one shareholder resided off-farm. The remaining households were settled on Verlorenvlei. The average age of the shareholders is 35 years; six of the shareholders are female and the average educational level reached is Standard 4. However, this profile does not discount the value of the experience which members have of agriculture, which according to Isaacs and Magobolo amounts to 637 years (1995). In a participatory rural appraisal (PRA) exercise held with the members of Nuwe Begin on Killarney in 1995, Isaacs and Magobolo (1995) found that the shareholders functioned very well as a group, despite the range of educational qualifications as well as language differences. Perceived problems included difficulty in understanding financial issues, illiteracy and language differences. Of the advantages of belonging to Nuwe Begin, security and financial gain were cited as the main advantages. Security incorporated advantages such as housing, co-ownership and decisionmaking, medical benefits and employment - usually closely linked to job security. Other

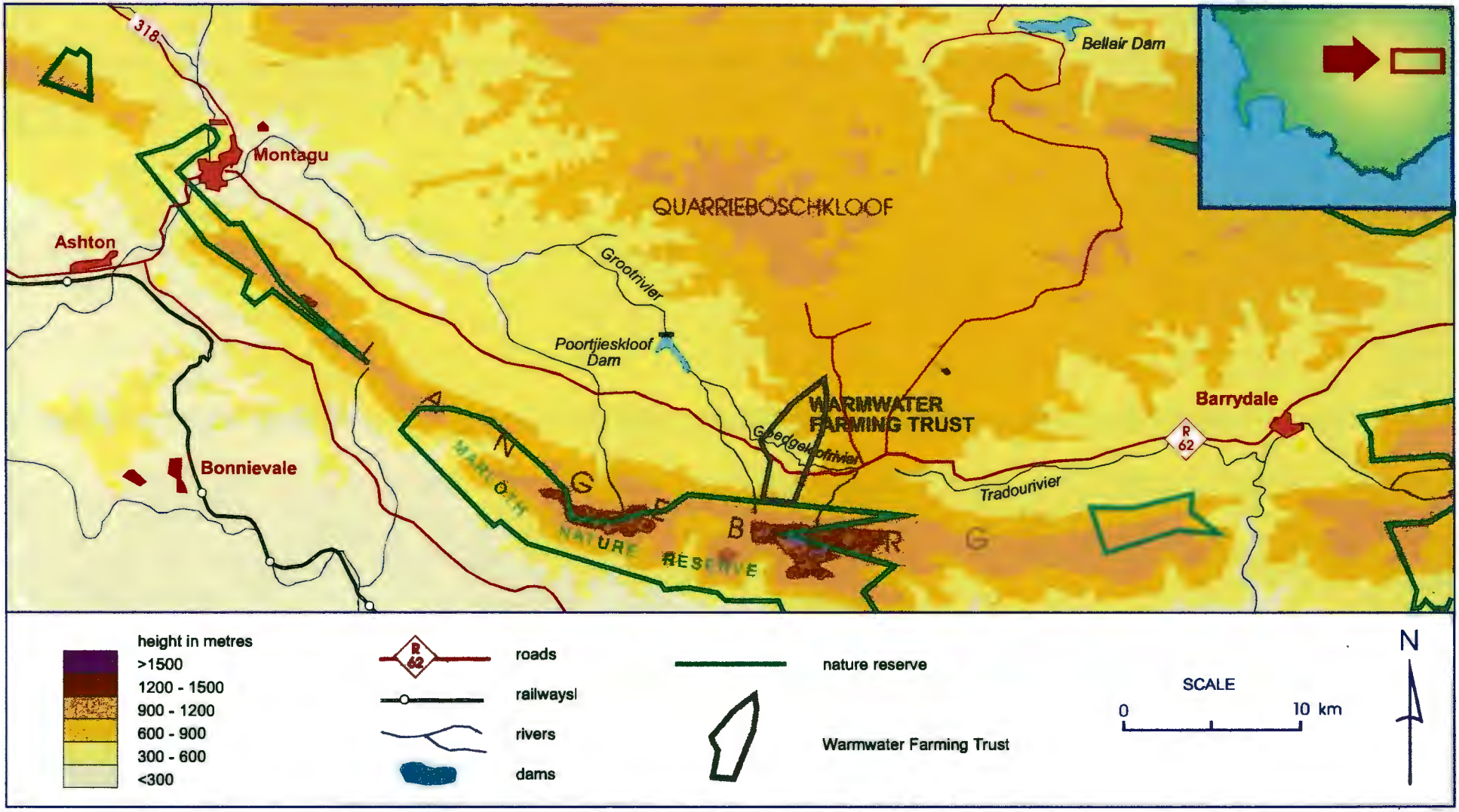


Figure 6.1.: The location of the Warmwater Farming Trust, Montagu, Western Cape

issues of importance included the need for training (technical training as well as literacy education); report back mechanisms to shareholders and the job description for a farm manager. Though the PRA exercise was completed prior to the acquisition of the farm Warmwater (even prior to its consideration) it highlights many issues of concern to the group at that time (Isaacs and Magobolo, 1995).

Increasing tensions between the members of Nuwe Begin and the farm owner of Killarney, resulted in some members of Nuwe Begin, as well as Sighardt Gaugler, losing their jobs. Some of these members were then settled on a farm in Ceres, Verlorenvlei, while the remaining members moved to Warmwater once the farm was purchased. Warmwater was bought for R 2.1 million with New Farmers providing 50% of the capital (investment capital), Nuwe Begin 45% (settlement grant) and Sighardt Gaugler 5% (private capital). A trust-based partnership was thus established between the three members. Nuwe Begin elected three of their members to serve on the trust body, who in addition to Sighardt Gaugler and Chris Crossley (Project Manager, New Farmers) constitute the trustees of the farm. The basic institutional structure is outlined in Figure 6.2..

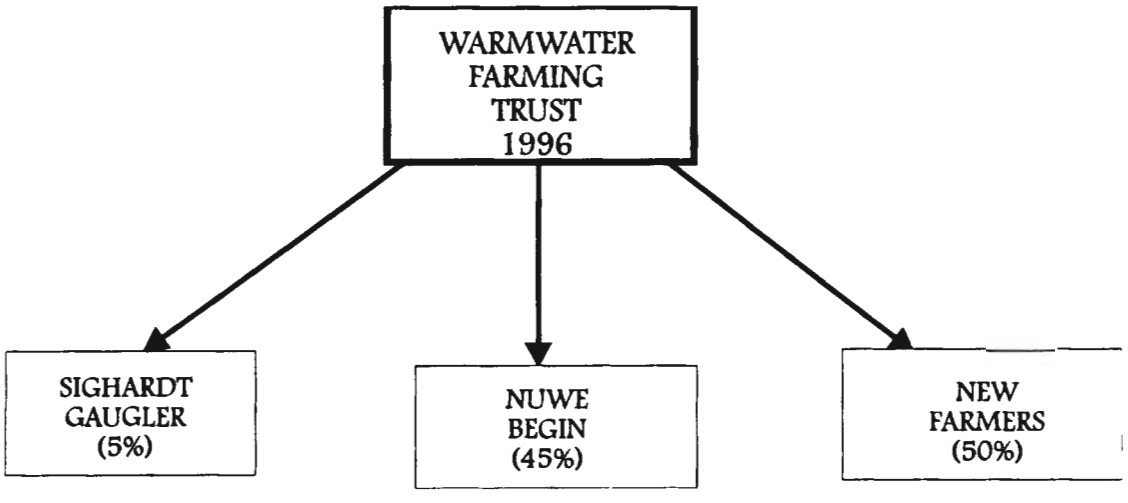


Figure 6.2.: The partners in the Warmwater Farming Trust

The members of Nuwe Begin moved onto the farm in November 1996, weeks before the start of the harvesting season. The harvest of 1996 was of a poor quality (900 tonnes), and the farmers felt that the orchards had not been prepared well enough by Warmwater's previous owner. The farmers worked very hard at improving their harvest, but the following year's harvest which lasted only from November 1997 - February 1998 was even worse than the previous one (300 tonnes). Despite the low

| TIMELINE | 25 May 1998 |
|---|---|
| DATE | EVENTS |
| 27 April 1994 | The idea of getting land to farm was first discussed. Subsequently, contact was made with Hannes Le Roux, a New Farmers (NF) representative. Collection of R 20 per member of Nuwe Begin was initiated. |
| May 1994 | The Nuwe Begin company was formally registered and the money which had been collected was put in a bank account. The Development Bank was approached for funding. As it was difficult to hold meetings on Killarney, Mr A. Joubert, owner of a nearby farm, Warmwater, allowed the meetings to be held on his farm. |
| Early 1995 | The Development Bank was abandoned and Nuwe Begin decided to approach NF. They were initially interested in purchasing Killarney, but there were too many problems and it was too expensive to buy. |
| September 1995 | The owner of Killarney, Mr Walthorp was unhappy about Nuwe Begin's activities and some members lost jobs. |
| April 1996 | It was very unpleasant on the farm and there were protests (such as toi-toiying) on the farm. Mr Sighardt Gaugler, farm manager of Killarney, who had assisted Nuwe Begin was fired and settled in Swellendam. |
| November 1996 | The farm Warmwater, which had been identified by Nuwe Begin and NF was purchased. Nuwe Begin had also loaned R 15 000 from New Farmers which would be returned when the group received the settlement grant of R 15 000 for which they had applied from the Department of Land Affairs. Nuwe Begin was registered as a company, while the farm was managed as a trust, the Warmwater Farming Trust (WFT). It was Nuwe Begin's first harvest and was preceded by a very dry winter. |
| 1997 | The WFT was constituted as follows: 45% Nuwe Begin; 5% Sighardt Gaugler and 50% NF. Members of Nuwe Begin saw the benefits of farming in a group being the combined knowledge of fruit farming. There was little rain, and it was a poor harvest, lasting only 2 months (late Dec. 1996 - Feb. 1997). The fruit was sold to Unifruco. The settlement grant which had been applied for was received in 1997. |
| 1998 | In 1998, Nuwe Begin lost its chairperson, who was now employed at Verlorenvlei. After a poor second harvest, partly attributed to climatic factors, problems, such as the age of trees, limited water from the mountain areas and hot summers were noticed. |
| February 1998 | Problems with trees which were planted too shallow was picked up. Meetings were held with NF to discuss problems, as they had just survived 1997-1998 season |
| April 1998 | The soil was tested and Nuwe Begin were discussing various options with NF, such as increased investment by NF; selling the farm; and approach additional investors. |
| May 1998 | Nuwe Begin decided to accept more money from NF, despite the fact that their shares would be diminished - they were informed that they would be given the first option to buy back their shares, should the situation on the farm improve. |

Table 6.1: The timeline (Field research, 25 May 1998)

rainfall experienced during 1997, which also affected other farmers in the region, the farm management felt that possible deep-seated problems were being experienced. There were particular concerns over the lack of growth of the trees. A report completed by a soil scientist confirmed suspicions that the soil had not been prepared properly (Schloms, 1998). It was found that trees had been planted too shallow and the soil had not been ploughed deep enough for the root systems of the fruit trees to maximise nutrient uptake by the roots - the growth of the fruit trees was therefore stunted. However, this was deemed to be due not to poor management, but rather the unavailability of the appropriate technology at the time of soil preparation.

My involvement at Warmwater started at this point when Nuwe Begin were faced with difficult decisions and morale on the farm was very low. A lot of effort had been put into improving the harvest, but when the group found out that a fundamental problem, which would be very costly to repair had to be solved, they were very despondent. They discussed their options which included selling the farm; investing in other activities to boost their income; or replacing the orchards over a period of time. The future of the WFT was being discussed and New Farmers project manager, Chris Crossley, felt that the investors be approached with the proposal of investing more money into the farm. This would have a profound effect on the 'worth' of Nuwe Begin's share in the farm. However, they had received the assurance from New Farmers that they would be given the first option to buy back their shares, should circumstances become favourable.

In the months that followed, I attended many meetings of the WFT, especially during the feedback sessions when management discussed the issues tabled at the Trust meetings. During the first session I was introduced to the farmers as a student / researcher who was interested in doing my research with the farmers, at subsequent meetings I spoke to the group about the research (See Appendix A). During this period, informal discussions with members of the group, management and New Farmers on general issues such as participation, land reform and the history of the WFT, greatly informed my knowledge of the farm.

### 6.1.2. Land, water and production

The WFT consists of two farms, Aan Het Warme Water and Quarriebosch Kloof and

is approximately 543 hectare (ha). Of this, 41 ha is currently under deciduous fruit production. The farm produces stonefruits, which include apricots, prunes (Plate 6.1.) and peaches (Plate 6.2.), while the rest of the land is as yet unutilised but has land available for grazing (Table 6.2.). Cultivars being grown are essentially those planted by the previous owner of Warmwater, and include Bulida (apricots), Rubynel (prunes) and Kakemas (yellow peaches). The projected expansion capacity for orchards has been put at another 15 ha, given the accompanying development of available water supplies (Gaugler *et al.*, 1996; van Zyl, 1996).

| LAND USE | HECTARE |
|---|---|
| orchards | 41 ha |
| sowing-land | 195 ha |
| houses, roads, farmhouse | 6 ha |
| potential orchards | 25 ha |
| veld | 276 ha |
| TOTAL | 543 ha |

Table 6.2: Current land uses on the farm Warmwater (van Zyl, 1996)

Due to the problems being experienced with tree growth and poor harvest, a study to investigate soil-related problems was completed in 1998 (Schloms, 1998). 25 soil profile pits were dug on the farm (Plate 6.3.). The researcher described the various soil types found on the farm and concluded that most of the soils were prepared incorrectly. The soil had developed on shale and though the soil is suitable for the production of stonefruits, proper soil preparation is essential. Past soil preparation was too shallow and greater soil depth would be needed to achieve maximum root absorption. This increased volume would enhance the buffer capacity of the root system, especially during periods of stress such as heat waves in summer (Schloms, 1998). Detailed bio-physical and technical studies formed the basis of future planning and modelling for Warmwater. The soil type found on Warmwater is therefore suitable for deciduous fruit production, a critical factor for the success of any future developments, is correct soil preparation.

Water is supplied to the farm from a number of different sources, including state sources, a water rotation system (98 hours every 14 days), boreholes and dams on the farm. An inventory drawn up just prior to the group moving onto the farm, listed the current water sources as consisting of five dams, three boreholes and

Plate 6.1.: Prune orchards on the farm, June 1998

Plate 6.2.: Peach orchards on the farm, June 1998

Plate 6.3.: One of the soil profile pits used to conduct soil analyses

water rotations from rivers in the area (Gaugler *et al.*, 1996). Currently the available water is used to irrigate 41 ha, while future developments could enable the expansion of the orchards on another 15 ha. This would entail utilising the unused boreholes on the farm, building a new dam and refilling the dams (Van Zyl, 1996). The water quality of the farm still needs to be tested. but no major problems had been detected at this stage. Though the main activity on the farm is deciduous fruit production, the potential for other land uses exist.

### 6.1.3. Socio-economic and political issues

15 families are currently living on the farm, while one member of Nuwe Begin lives in Barrydale, a town 30 km from the farm (Figure 6.1.). The average size of the family on Warmwater is 6, but in some cases up to 10 people occupy a two bed-roomed house. The houses are of a very poor quality and in my subsequent home visits serious problems such as leaking roofs, damp and crumbling walls, were observed. Another problem relates to the lack of sanitation facilities, not one of the 15 houses on the farm (with the exception of the main house), was equipped with a toilet or bathroom (Table 6.3.). The toilet facilities of the main house which was occupied by the previous owner, is used by the whole community. The house also serves as a venue for church and management meetings, and due to the cold weather, most of the research exercises were conducted there. Some houses did not have electricity or warm water and this has caused a great inconvenience to many families. During the summer months when precious water resources are needed for irrigation, water for domestic use is also limited.

The farm is located close to the main transport route (R62), which runs directly next to the farm (See Figure 6.1.). Some of the houses are located above the road, and during winter the river is flooded, those people have to choose an alternate route which runs through one of the neighbouring farms. There are no public transport facilities, except during the vacation when most people travel by taxi - this is usually very expensive. The lorry on the farm is used to transport people to Montagu to visit the doctor and also to do their shopping, but this is not viable in the long term as the cost of fuel is very high. There are plans afoot to purchase a vehicle in the near future. Health facilities are located in the town of Montagu and management ensures that those who need it, can visit the doctor or hospital. District nurses pay a weekly visit to the farm and have a mobile clinic which many of the women use.

There is a primary school nearby, but women indicated major problems with their children who are not yet of school-going age, as the farm does not have a crèche facility. A neighbouring farmer is starting classes for pre-school children but this would still preclude the younger children from attending. There is also the need for adult education, both literacy and technical education, as the PRA exercise revealed (Isaacs and Magobolo, 1995).

| HEAD OF HOUSEHOLD | HOUSING | | | | POPULATION NUMBERS | | | |
|---|---|---|---|---|---|---|---|---|
| Home owners | kitchen | sitting room | bed-rooms | total | men | women | children | total |
| Jeffrey Foster | X | X | XX | 4 | 1 | 2 | 1 | 4 |
| William Gcayiya | X | X | XX | 4 | 1 | 1 | 4 | 6 |
| Chrisjan Hendricks | X | X | XX | 4 | 1 | 1 | 5 | 6 |
| Niklaas Jaftha | X | X | XX | 4 | 1 | 1 | 4 | 6 |
| Freek Johannes | X | X | XX | 4 | 1 | 1 | 3 | 6 |
| Piet Johnson | X | X | XX | 4 | 1 | 1 | 4 | 6 |
| Willem Lamberts | X | X | XX | 4 | 1 | 2 | 3 | 6 |
| Willem Markus | X | X | XXXX | 6 | 2 | 1 | 1 | 4 |
| Basie Mintoor | X | X | XX | 4 | 1 | 1 | 5 | 7 |
| Dawid Mrwebi | X | X | XX | 4 | 1 | 1 | 4 | 6 |
| Elias Pokwas | X | X | XX | 4 | 1 | 1 | 2 | 4 |
| Jan Scheepers | X | X | XX | 4 | 1 | 1 | 7 | 9 |
| Hendrik Skippers | X | X | XX | 4 | 1 | 1 | 4 | 6 |
| Rudolph Skippers | X | - | X | 2 | 1 | 1 | 1 | 3 |
| Leon Zana | X | - | - | 1 | 1 | - | - | 1 |
| TOTAL | 15 | 13 | 29 | 57 | 16 | 16 | 48 | 80 |

Table 6.3: A household profile of Warmwater (Source: Compiled by Warmwater resident)

A picture of the WFT emerges, which is in part typical of the conditions of farm workers throughout the Western Cape, for example poor housing and a lack of sanitation facilities. What distinguishes the WFT, is it was started on a model which purports to address the unfair labour practices and land tenure relationships of the past. Thus far, little has been done to improve the living conditions on the farm.

### 6.1.4. A future on Warmwater?

The meetings on the farm highlighted the complexity of the problems which Nuwe Begin were facing in the land reform project. Management issues, financial planning and participation in decisionmaking are some of the issues of concern for the WFT. During 1998, Nuwe Begin had also lost their chairperson who left the company to head the Worker's Trust formed at the farm Verlorenvlei. The farmers also appeared to be struggling to come to terms with the dual role of farm labourer - shareholder. This dualism sat very uneasily in my mind and seemed to cause confusion among the members of Nuwe Begin as well. I was very interested to find out its effect on the level of participation in decisionmaking, which I felt was one of the pillars of agricultural land reform. Another interesting point raised by the group concerned the term farm worker / labourer - the group did not regard themselves as workers, but rather farmers who play a role in managing the farm. My contact with Warmwater clearly illustrated how issues of power and politics impact on the management of natural resources. More importantly, it caused me to seriously question the viability of the FWES model and the dialectic of worker - shareholder. This will be explored further in Chapter Seven.

Another concern which was raised was the need to facilitate decisionmaking processes, especially of a financial and/or legal nature, which farmers did not completely understand. For example, in one of the more recent meetings, farmers were presented with an important issue on which they had to take a decision. A legal decision, with important implications, had to be taken. It dealt with rectifying a mistake on the *Trust Act* which stated that Nuwe Begin was a trust, whereas it had never been registered as such. This could therefore nullify contractual agreements, as Nuwe Begin was legally registered as a company. This caused confusion to many farmers who did not understand how such a serious mistake could be overlooked. They raised concerns of documents being printed in English, as well as the lack of time available to them to peruse and understand the fine print of documents. In the words of one member:

> Ons is 'n trust daar en 'n maatskappy hier. Een van die dae gaan ons tronk toe vir iets wat ons nie van weet nie.[6]

[6] We are a trust there [on the document] and a company here. One of these days we are going to jail for something we know nothing of.

A document consisting of extracts from Nuwe Begin meetings which were held to discuss their concerns, echoes many of the above-mentioned points (Gaugler, 1997). These included resettling to a farm where infrastructure, especially housing is far below the standards which the farmers were accustomed to on Killarney. The shouldering of additional responsibility, through participation in decisionmaking was also new to the farmers. Efforts needed to made to facilitate their participation, for example simplifying legal and economic concepts and conducting meetings in Afrikaans. Formal meetings with lawyers, bankers and scientists also needed to be made more accessible for participation by the farmers. Farmers' morale was very low due to the poor crop of extremely small fruit in the 1996/1997 season, and the sometimes hostile and negative attitudes of neighbours.

In view of these difficulties, it is important to note that the multitude of challenges facing the farmers provides important lessons on farm equity schemes as land reform models. Firstly, New Farmers had envisioned that in the long term, Nuwe Begin's interest would constitute the majority share of the farm - a situation which appears unlikely due to the proposed investment to be made by New Farmers. Secondly, poor soil preparation and consequent tree growth has proven to be very costly to 'repair'. Thirdly, the relationship between Nuwe Begin and New Farmers has become very tense as members of Nuwe Begin felt that New Farmers did not show enough interest in the farm and pre-determined issues without consultation. The financial difficulties on the farm had also led to a delay in the payment of promised wage increases which angered many of the members of Nuwe Begin. Though the group was aware that they were shareholders of Nuwe Begin who had invested in the WFT, they did not link the losses on the farm to themselves as individuals were employed by the WFT. For example, they were very disappointed at not receiving their wage increases which they had to forfeit to protect their interest in the WFT. This resulted in arguing over 'empty' promises made by management. Though a committee was set up from among the workers to investigate the issue, they never met to discuss the issue - emphasising the need for a re-commitment to notions of capacity building and empowerment.

The farmers of Warmwater challenged many of my concerns, especially those which viewed the beneficiaries of FWES schemes as a rural elite. The people living in houses with no sanitation, poor housing and a multitude of socio-economic problems, were far from elite. They were faced with issues of survival, of creating

sustainable livelihoods and of trying to play a "positive part in their own destiny" (Gaugler, 1997). In addition, the members did not all view the WFT as an equity project, but rather viewed New Farmers as investors, with themselves being the farmers. To many, the wheels of change were turning much too slow and the need for an impetus for positive change is required to maintain beneficiary confidence in land reform. With an awareness of the need to broaden their knowledge, especially in terms of both agricultural and financial management skills, the farmers display one of the key requirements in transforming conventional to more sustainable agricultural systems - the willingness to learn and to break some of the conventional rules.

## 6.2. GROUND ZERO

Field research, centred on the initiation of an indicator-based participatory monitoring system, was initiated once suitable dates had been decided upon. The methodological appendix (Appendix A) outlines the basic procedure and research schedule employed in the field research. Wendy Engel, a third year agriculture student from the University of Stellenbosch, and myself conducted the range of participatory research exercises with the members of Nuwe Begin. The remainder of this section deals with the findings of the field research which involved participatory research methods, interviews and informal discussions (Appendix A).

### 6.2.1. Phase one: Problem analysis

The main objectives of the research which were to assess perception towards sustainable agriculture or sustainability; to develop indicators that would assess farm 'health', and also to initiate an on-farm monitoring process, were discussed in initial meetings with farmers (Appendix A). Though I had spoken to the farmers on previous occasions, I initiated this introductory exercise with a brief discussion on the concept of sustainability, or well-being; the use of indicators and the possible value of the research to the WFT. We gathered outside the main house on the farm, which belonged to the previous owner and served as the venue at subsequent meetings. The main principles of sustainability, which includes economic, ecological and social components translated into principles of justice, sustainable use of natural resources, quality of life and the meeting of basic needs, were discussed. How would

one know whether you are sustainable? I used the metaphor of a healthy body to explain that one could generate indicators, cum-signs, to show the 'health' or sustainability of Warmwater. To this end, I included a diagram of the human body and the basic processes one would follow to diagnose an illness. This greatly helped to transfer the notion of indicators as signs of well being. The research conducted during this period lay the foundation for developing indicators and involved documenting the history of Warmwater; analysing the problems being experienced on the farm and identifying the main spheres of activity or various components of the farm.

As an introductory exercise, the timeline, frequently used in PRA research was used to elicit some background information on the farm (Table 6.1.) (Field research, 25 May 1998). The timeline was explained to the group and they were asked to trace their interest and involvement in obtaining land for agriculture in a chronological manner. Approximate dates were provided where specific months could not be recalled. Though the manager of the farm initiated the discussion and contributed mostly at first, the rest of the group gradually started to participate. After the timeline was completed, the group remained to talk about Warmwater and the difficult circumstances on Killarney (the farm on which they worked prior to moving to Warmwater). The owner of Killarney was unhappy about the activities of Nuwe Begin and a range of events, including protests by the farmers (Table 6.1.) and the firing of Nuwe Begin members all contributed to the farmers' desire to acquire and move to new land. However, current problems being experienced on Warmwater, such as the need to replace the orchards due to poor soil preparation and consequent stunted growth, will require substantial financial inputs - a factor which concerns the farmers. Many of those present also spoke about how it felt to participate in decisionmaking and the fact that they now had a bigger stake in the farm. Many people said that their housing was in a very bad condition and of a poor quality, but were willing to wait for improvements as they are happy and much more 'free' on Warmwater.

Although participation in the timeline was initially slow, both Wendy and I felt that we had established a good rapport with the group and that the exercises that would follow, would elicit more participation. We spoke about the research which we would conduct the following day, which involved an analysis of the problems at Warmwater. It was decided that we would start the research early in the morning as

the group could not work in the wet orchards. This would establish the routine for the reminder of the research. The problem with this schedule was that it excluded the participation of women who were not shareholders, as most of them were working on a flower farm in the area during this period. Interviews with approximately half of the women were held when they were available. These are discussed in Section 6.2.2..

On Tuesday, 26 May 1998 we started analysing the problems at Warmwater. The timeline had given us a short history of the group and the process they followed to obtain Warmwater. I then explained that we would talk about the problems at Warmwater as this would give us a clearer indication of some of the issues or symptoms of the 'health' of the various aspects of the farm. The group consisted of approximately 16 and was asked to divide themselves in two. The group had split in two and although the one group was bigger than the rest, the participants were not keen to move from their groups. I discovered later that the way in which the group had split reflected current tensions on the farm, for example the one group consisted largely of the members of Nuwe Begin who were currently unhappy about some of decisions which had been taken by management. I started to learn about the dynamics of Warmwater, the inter-personal relationships and some of the conflicts. However, it was also important that at this early stage of the research that the groups were not forced to split. Each person in the group was given five cards on which to indicate the main problems they were experiencing. Group A was much smaller than Group B and were given three additional cards. The farmers were asked to indicate the main problems on the farm and to rank it from most to least important. Wendy and I acted as facilitators to the two groups. Those of the group who were illiterate (three in total) were assisted by myself, Wendy or other members of their group to table their problems. We used symbols in addition to writing in these cases. After the two groups analysed and ranked the problems, we reconvened and the findings were presented to the whole group. One or two people were elected by their group to present the findings and to indicate why certain problems were regarded as more important than others (See Appendix B).

Differences in the method in which problems were ranked emerged, for example Group A used a scale of 1 - 6, whereas Group B used a scale of 1 - 3 to rank their problems from most to least important. In addition, Group B also started to categorise their problems into components, for example natural resources (water,

trees, soil) and housing issues. However, important differences emerged in that Group B regarded management and natural resources as the most important problem areas, while Group A identified housing. Group B remarked that housing was not such a big priority because they, as members of Nuwe Begin, now had a stake in the farm which required that they prioritised the well-being of the farm. Table 6.4. briefly lists the main problems, as identified by the two groups. In addition, participants remarked that the analysis of the problems could input to the planning on the farm which was currently on the agenda.

The problem identification (Table 6.4.) revealed that the three central issues on the farm at the time were natural resources (water, trees, soil), housing, and management. In addition to assisting in understanding the farm dynamics, this exercise also enabled the identification of the various components of the farm (natural resources, socio-economics, and institutions).

| GROUP A | | GROUP B |
|---|---|---|
| | most | |
| housing | important | water (farm and domestic use), |
| | I | management, income, farm |
| water | I | equipment and orchard |
| | I | preparation |
| Income and orchard | I | |
| preparation | I | housing, income and lack of |
| | I | electricity |
| training and education, | I | |
| women's needs, supplements | I | land for gardening and training |
| for farm income | I | |
| | I | |
| transport and equipment | I | |
| | I | |
| health, education and insurance | least | |
| needs | important | |

Table 6.4: Summary of the main problems as prioritised by the farmers (Field research, 26 May 1998)

The problems raised by the farmers were based largely on current problems that were being experienced, for example with the orchards, leaking roofs, and faulty farm equipment. It also captured the systematic way in which the farmers viewed Warmwater. Although the linkages between income, education and training, natural resource management, health and housing were not made explicit by the

groups, socio-economic (housing, income, training) concerns were raised along with bio-physical and technological (irrigation, soil, water) issues. Holistic thinking and the notion of the farm as a system appeared to be a part of the way in which the farmers framed their problems. This exercise thus drew out the various components of Warmwater which would form the basis of the exercise to identify indicators.

On Wednesday, 27 March most of the members of Nuwe Begin were present and during this session we went through the problems to give them an opportunity to add or delete any of the problems. This was done every morning prior to embarking on new exercises, thus giving the participants a chance to add, change or remove anything. In addition, we also kept note of where we were moving towards, i.e. the generation of indicators. In adding some of my own biases, I also asked the group whether there were problems or important issues on the farm related to pesticide use; soil erosion and nature conservation. Pesticides were definitely a problem, especially for the operators who don't have any masks, gloves or overcoats for protection from the fumes of the pesticides. There were also no handbasins to wash their hands after spraying. Some of the group also said that their skin itched or face burnt after there had been sprayed. Soil erosion also appears to be a problem as farmers have seen how topsoil washed away, especially in steeper areas. Though this is seen as a big problem, they were not aware of any methods they could use to rectify this. Farmers felt the land on the farm was not conservation worthy. After we spoke about these problems, we proceeded to the following exercise by categorising or grouping the problems into components. Group B had already started to group problems informally the previous day, to which I added some more components (drawn from the problems of Group A). I illustrated the components on a diagram and asked whether they were satisfied that it represented all the components of the farm. They added the following categories to the diagram: insurance, clothing for farm work and the needs of children were added to those of women (Figure 6.3). I requested that the component, environment be added as I was very interested in the way they would distinguish between natural resources and environment. I then explained how this categorisation would form the basis of the research which we would conduct the following week, i.e. the development of indicators.

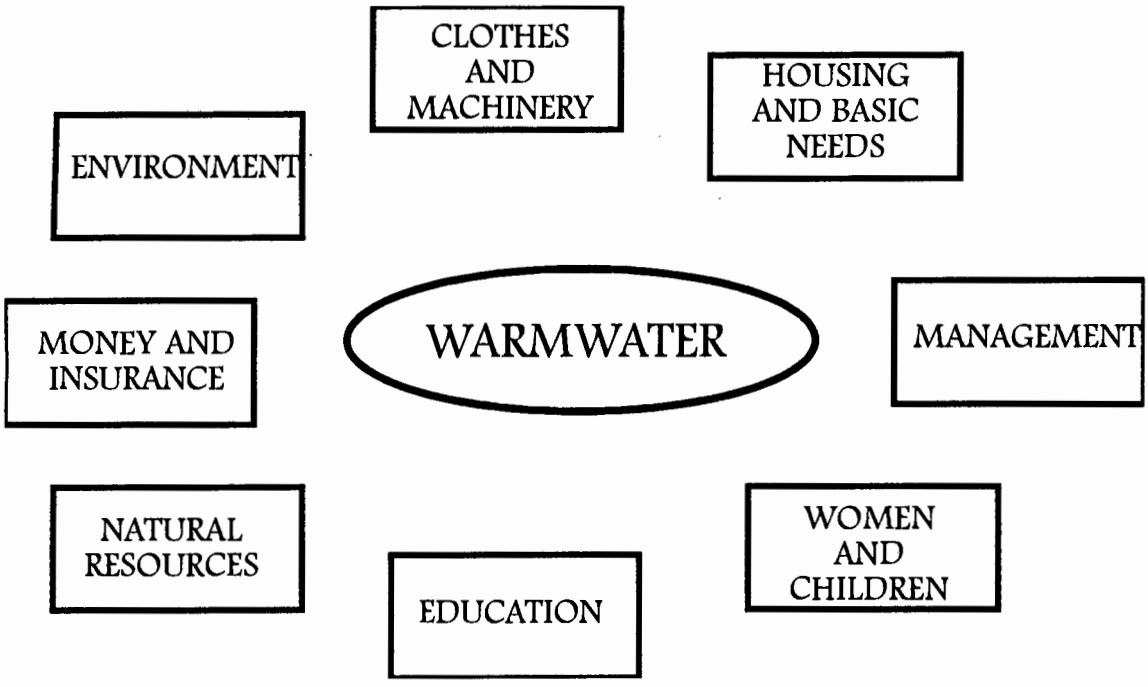


Figure 6.3.: The components of Warmwater's farming system (Field research, 27 May 1998)

After the sessions with the group on problem analysis and the grouping of problems, the basis for the development of indicators had been established and a framework consisting of various components had been drawn up (Plate 6.4.). During these first three days, we often referred to sustainability as a goal in agriculture and the role that indicators could play in working towards this goal - the group could thus see that we were busy following a series of steps in developing indicators and in understanding the concept of sustainability. During this period, our metaphor (and by this time mascot) of sustainability, the healthy body, was continuously referred to in order to illustrate that in order to make diagnoses, one needs to know the body parts and the way in which they function (social, economic, biophysical and political components); the areas of pain (problems); and the signs for certain illnesses that need to be checked (indicators). However, very often a diagnosis is made by those close to the human, such as the mother, who has some practical knowledge of the human system. So too, the farmers, primary resource users, could begin to identify signs or indicators which could serve as a tool to monitor the farm's progress to sustainability.


Plate 6.4.: Farm system components as identified by the farmers, 27 May 1998

Plate 6.5.: Indicators were developed on the needs of women and children

Plate 6.6.: Indicators were developed on the 'health' of water resources

### 6.2.2. Phase two: Generating indicators of sustainability

This phase occurred approximately a week after the first phase and was initiated on the 3 June 1998. Research exercises were conducted in the morning. I started the first exercise by recollecting what was done thus far. We were now at the stage where we would start to identify indicators. Prior to this, we discussed the concept of sustainability and its potential as a goal on Warmwater. I asked if they wanted to farm sustainably on Warmwater? This was a question which we explored further during later sessions. I used a simple sketch to illustrate how indicators of the 'health' or sustainability of Warmwater could be generated. These indicators would be developed on the various components which had been identified by the group in the previous sessions. We spoke about the components which they had developed and I explained that we would use these to generate indicators.

The group split in two with approximately nine persons per group. At this stage the group split evenly and we started with the indicator exercises. Charts were put up and each group was given three components to analyse, mixing simpler with more complex components, for example clothing and machinery and management. The two groups basically followed the following process: they analysed the component and divided it into various sub-components which they felt were the most important issues. This was done informally. Thereafter they chose an indicator which would help them to monitor the 'health' of that issue. After they had chosen the indicator, it was noted on the chart. Decisions then had to be taken on how they would measure the indicator, who would measure it and how often. The groups developed indicators for the following themes on 3 June 1998.

*GROUP A: CLOTHING AND MACHINERY; MANAGEMENT; ENVIRONMENT*

This group consisted of eight people, two women and six men. Once again, as in previous exercises, the two members of Nuwe Begin who were represented on the management board were together. However, by this stage of the research communication and trust between myself and the farmers had increased as the groups could joke about the strategic alliances being formed. In addition, quieter people also started to participate in the exercises. The components were first analysed by the group and thereafter indicators were developed. Once the group identified an indicator, it would be recorded on the charts by myself or Wendy.

Group A started with clothing and machinery (Table 6.5.) as it was thought to be the simplest component.

| THEME: CLOTHING AND MACHINERY | | | |
|---|---|---|---|
| INDICATOR | HOW WOULD YOU MEASURE IT? | WHO WOULD MEASURE IT? | HOW OFTEN? |
| number of people without clothing | count | supervisors | before harvest time |
| each type of machinery has a specific problem e.g. lorries and tractors | before you work with the machine, test it | operator; serious problem - mechanic | depends on the fault, if possible every 3 months |
| packing machine's axle, sprocket and chain | let the machine run | operator (Hendrik Skippers) | during packing and after the harvest |
| orchard tools are examined as we work with it, e.g. pruning scissors, ladders | breakage / fault in equipment | whole working-team | before harvest, pruning time |

Table 6.5: Indicators for monitoring clothing and farm machinery (Field research, 3 June 1998)

Clothing, such as overalls and boots is an important need on the farm, especially in the winter months when the orchards are wet and one can easily catch cold. The group felt that before harvest time, when the clothing is used most, it had to be ensured that workteams had proper warm clothing and boots. It was very difficult to develop an indicator for the various types of farm machinery as it was felt that each machine had particular problems, for example a tractor or lorry. They therefore decided on developing a general indicator which would state that certain machinery gave particular problems. The same was said about tools used in the orchards, such as ladders or pruning scissors. The general feeling was that when faults were picked up, management or the farm mechanic would be informed. The packing machine however was giving them particular problems and they felt that they could specify these problems as it could be checked prior to use.

I had initially been surprised at the group's identification of clothing and farm machinery and implements as an important component of Warmwater. However, I could see from this exercise what a vital role this played on the farm. Commercial agriculture relies heavily on machinery and maintenance costs is an important factor on the farm. Correct clothing is also essential as Montagu gets very cold in the

winter and the wet and cold winters, in addition to inadequate housing and infrastructure of rural Western Cape is said to be one of the primary factors in the high tuberculosis figures of the province. Most of the group were still wearing the clothes which they had received at Killarney.

| THEME: MANAGEMENT | | | |
|---|---|---|---|
| INDICATOR | HOW WOULD YOU MEASURE IT? | WHO WOULD MEASURE IT? | HOW OFTEN ? |
| planning: do we reach our targets (e.g. time, amount of fruit picked) | figures are compared | management and supervisors | daily, annual (harvest) and monthly |
| budgeting: expenses must not exceed income | figures | management and assistants (Cynthia Boshoff en Sighardt Gaugler) | monthly and during harvest time weekly |
| labour planning: do the work-teams meet their goals? | figures and quality of work | supervisors | daily |
| administration: report of the auditor | looks at books | auditor (Caledon) | monthly |
| report-back to Nuwe Begin: meetings; morning-meetings | after management meeting with Trustee, does management hold a meeting? | management | as necessary |

Table 6.6: Indicators of good farm management (Field research, 3 June 1998)

Identifying indicators for the component, management, was very difficult. Many of the problems which were currently being experienced at Warmwater were related to decisions taken by management, notably that of wage increases. There are very high expectations from management, as I gathered from my attendance at meetings as well as from informal discussions. The different aspects of management, such as planning and financial budgeting, were firstly discussed (Table 6.6.). These were regarded as the most important factors governing the success of management. Indicators were then developed to ensure that they take place in a sound manner. The group who had developed these indicators included two members of the management team. I was initially concerned about this, as Group B had been very vehement about the problems they were experiencing with management during the problem analysis exercise. However, during the feedback session, the members of Group B were satisfied with the indicators which were developed around this component. The presence of two of the members of management in Group A also

highlighted the needs of further training to increase their abilities to better manage Warmwater. There was a need to move beyond damage-control to engage in pro-active planning.

| THEME: ENVIRONMENT | | | |
|---|---|---|---|
| INDICATORS | HOW WOULD YOU MEASURE IT? | WHO WOULD MEASURE IT? | HOW OFTEN? |
| removal of exotic trees (winter months problems with flooding) | see flooding | everyone, especially those who work in those areas | winter months |
| pollution e.g. how do trees grow, water quality | look at trees, water tests | self and experts | during the harvest time |
| littering | condition of the area | everyone | daily |
| education on the environment: environmental awareness | lifestyle | everyone | daily |
| suitability of climate: temperature | thermometer | expert | daily |
| nature conservation: areas which are suitable for conservation | quality of areas | expert | one time |
| soil erosion: soil that washes away | see the problem | everyone that works, soil scientist | when in area or an expert on an annual basis |

Table 6.7: Indicators of the environment (Field research, 3 June 1998)

I suggested the theme 'environment' in addition to those identified by the group. I was specifically interested to see how farmers would frame environmental problems and also whether the environment was regarded as a separate issue by the group. Most of the indicators on environment were linked to the problems the group were experiencing with farming, for example soil erosion had caused them to lose some trees; climate is seen within the context of the suitability of the area for fruit farming; and exotic trees are seen as posing a problem as it keeps material that flows in the river back which has caused harm to the orchards, especially the trees growing near the rivers. The environmental issues are thus linked to the livelihood of the group, in this case fruit farming. (Table 6.7.). This is not uncommon as a sustainable livelihoods-centred approach, dominates environmental action in the South (Redclift and Sage, 1995).

There were some indicators dealing with more conventional notions of 'environment', such as litter, the need for environmental education and nature conservation. The group felt that the area was not conservation worthy, but they agreed that perhaps a nature conservationist could assess this further. A hiking trail, the Swellendam trail passes on the border of the farm and one of the over-night huts is located nearby. Thus, there was a feeling that the ecotourism potential of the farm should be investigated.

GROUP B: MONEY AND INSURANCE; WOMEN AND CHILDREN; EDUCATION

Group B consisted of eight members, all male. Wendy acted as a facilitator for this group.

| THEME: EDUCATION | | | |
|---|---|---|---|
| INDICATOR | HOW WOULD YOU MEASURE IT? | WHO WOULD MEASURE IT? | HOW OFTEN? |
| reading and writing | number of people | management, self | annual |
| prune | see | management | 2 times per year: summer and winter |
| irrigation courses | meters | self (Willem Markus) | monthly |
| spraying (pesticides) | unhealthy tree e.g. fruit infested with pest | Jonathan, traps for fruit flies (Robertson monitor) | once per week (Jonathan), every day |
| driving a tractor | driver's licence | management, self | as soon as the harvest is completed |
| look at export fruit | fruit gets sent back | management | annual |
| soil | how to collect soil samples | self, other | before laying new orchards |

Table 6.8: Indicators of education (Field research, 3 June 1998)

Under education, this group discussed two main educational needs, that of literacy and technical education which would increase their knowledge about farming (Table 6.8.). They said that it was difficult to measure, but that management would possibly be tasked with assessing whether education resulted in an improvement in the quality of their work. This would be the best indication of whether education is having a positive influence. Technical education, particularly related to farming,

was needed in the different seasons when certain activities occur on the farm, for example pruning. Currently, farmers learn from one another how to prune or thin out trees. There was a need for improved understanding of irrigation and soil and pest management. There were also concerns that many farmers were not in possession of a driver's licence yet had to cross the road (R62) to reach the orchards on the other side of the road.

Educational needs are one of the priorities on Warmwater - not only participation in decisionmaking but capacity building through training and education is important. Warmwater purports to be built on a model, more progressive than those which the group had experienced as farm workers on commercial farms. A big part of achieving this goal is to increase access to educational opportunities through attending courses on technical aspects of agricultural management and initiating literacy education on the farm.

| THEME: MONEY AND INSURANCE | | | |
|---|---|---|---|
| INDICATOR | HOW WOULD YOU MEASURE IT? | WHO WOULD MEASURE IT? | HOW OFTEN? |
| expenses | figures (R) | management | every time they do the books |
| income | figures (R) | management | every time they do the books |
| salaries | increase / decrease/ remain the same | self (workers) | annual (June) |
| debt | profits | bank | after the harvest |
| insurance cover | people on the farm | insurance company / self | monthly |
| new orchards | hectare | plan ourselves | once per year: June - August |
| tools / machinery | fix | farm mechanic | daily |
| hire labourers during the harvest season | number of people, e.g. 30 healthy people | management | harvest / thinning of trees before harvest |
| export vs. local marketing | price | management | after harvest |
| housing | toilet, electricity, water in the house | self | annual, daily basis |

Table 6.9: Indicators of sound financial management (Field research, 3 June 1998)

Indicators were firstly developed to give a sense of the income, expenses, and debts of the farm (Table 6.9.). These would be good overall indicators of how the farm was faring. Is it going well? Do they owe too much? Do the expenses exceed the income of the farm? The indicators chosen hereafter focus on the aspects of farming which are generally expensive, for example hiring seasonal workers, adding new orchards, improving housing and fixing machinery. These issues have been identified by the group as they reflect the main financial outputs of the farm, other than salaries.

One of the key features of these indicators is that the group indicated that the key party responsible for ensuring that financially sound decisions are taken, should be management. My presence at previous meetings revealed a hesitance by the members of Nuwe Begin to partake in financial decisionmaking, yet they were not satisfied by some of the decisions taken by management. The formation of a wage dispute committee, initiated to involve the farmers, was not successful as the committee never met to discuss the issue. Once again, I felt that the dual role of shareholder - labourer was rearing its head and frustrating the group who had elected the management team to represent Nuwe Begin on the WFT. However, efforts by the management team to involve the farmers in decisionmaking, especially related to financial management aspects, did not meet with enthusiasm. Many of the farmers did not want to shoulder the responsibility of taking such decisions, while many felt ill-equipped to partake in planning and decisionmaking processes.

| THEME: WOMEN AND CHILDREN | | | |
|---|---|---|---|
| INDICATOR | HOW WOULD YOU MEASURE IT? | WHO WOULD MEASURE IT? | HOW OFTEN? |
| refrigerator, television | electricity | woman herself | every day |
| income for home | happiness, food, clothes, own transport | woman herself | every day |
| work | happiness, food, clothes, own transport | woman herself | every day |
| playground / crèche | see | child and mother | every day |
| education and training | needlework, pruning, driving a tractor, forklift, keeping books | manager | every year |

Table 6.10: Indicators of the well-being of women and children (Field research, 3 June 1998)

The needs of women and children was chosen as a component on Warmwater and was analysed by the group which had none of the female shareholders present. This group identified indicators which could test whether the needs of women and children (Plate 6.5.) such as education, employment opportunities during the winter months, the need for a playground and crèche were being met (Table 6.10.). They said that women could indicate whether they were happy with a situation and whether there was money and food. This would show whether there has been an improvement in women's income as well as employment opportunities. Issues raised during interviews held with women over the two weeks, are provided below. These echo many of the underlying issues raised in the indicators developed by Group B.

As the research was conducted in the mornings when the orchards were too wet to work in, we could not get the women to participate as some had worked on a flower farm, while others were busy with chores at home. Over the two weeks we spoke to eight women about the problems they were experiencing at Warmwater and about the improvements that they would like to see.

The majority of the problems identified by the women dealt with the quality of the housing, low income and the need for work during the winter months. Many women also felt there was a need for a crèche as it was difficult for them to leave their children when they were working on the farm. Currently, some women are paying childminders - this is an additional expense on an already tight budget. Other problems, like alcohol consumption and a shortage of transport was also spoken about. There were some grievances from a woman working on the flower farm that they were being underpaid. Women on the farm who lived near to a gravel road were also very concerned about the safety of their children as Warmwater's neighbour drove down this road at a high speed. These interviews gave us an opportunity to speak with women about their problems and to present them along with the research findings. Most of the women on the farm were satisfied with the health services, they were taken to a doctor regularly and could attend the weekly clinics of the district nurses. In addition, they were happy to be here with their families and hoped that the vision of having a bigger stake in Warmwater would soon materialise. The words of some of the women are indicated below.

*"We want to help our husbands to tackle this project."*

*"The store is old and the machines are broken."*

*"I am willing to undergo training."*

*"We must investigate other opportunities, such as a farmstall."*

*"There must be a place for us to put our children during harvest time."*

*"There must be love between one another, sometimes the men break one another down."*

*"We have no toilet and it rains right through (our roof). "*

*"Other work, such as needle work is needed. "*

*"The adaptation to Warmwater is difficult as we used to be paid on a weekly basis, but we are now paid monthly."*

After they developed the indicators, the two groups reconvened and presented their findings. An opportunity was therefore presented for any additions or changes that they wanted to make to the indicators. Some of the farmers experienced difficulty in deciding on how an indicator would be measured and also by whom. Although farmers felt that there were certain issues which they would deal with, they recognised that if they could not solve the problem or needed confirmation on a problem, expert assistance would have to be utilised. Sighardt Gaugler, one of the shareholders on the WFT had conducted his weekly visit to the farm and this presented me with an opportunity to conduct an interview with him. He was very positive about the research process and findings and hoped that it would especially be of benefit to the members of Nuwe Begin in increasing their participation in decisionmaking.

On 4 June 1998, the two groups developed indicators for two major themes - housing and basic needs and resources. Before the groups split up, we drew up a seasonal calendar to map out which activities occurred during the year. Due to the fact that many of the indicators should be checked during a certain season or after a certain activity, it was deemed necessary to find out exactly when these activities occurred. Table 6.11. indicates the main activities identified by myself. Wendy and the farmers, drawn from the field research conducted the previous day, as well as informal discussions with the farmers.

| ACTIVITIES ON THE FARM | CALENDAR | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| ploughing | | | | | X | X | | | | | | |
| pruning | | | | X | X | X | X | X | | X | X | |
| thinning | | | | | | | | | X | X | X | |
| spray for pests | | | | | X | X | | X | X | | | |
| harvest | X | X | X | | | | | | | | X | X |
| packing | X | X | X | | | | | | | | X | X |
| fertilising | | | | X | | | | | X | | | |
| irrigation | X | X | X | X | X | X | | | X | X | X | X |
| spray for weeds | | | | | | | | X | | | | |
| mechanical weed-removal | | | | | | | | | X | X | X | X |

Table 6.11: Main agricultural activities on Warmwater (Field research, 4 June 1998)

GROUP A: HOUSING AND BASIC NEEDS

After completing the above-mentioned task, the groups split and I switched to facilitating the exercise with Group B, the group with which Wendy had worked before. This would provide us with an opportunity to meet more of the participants. Group A once again consisted of nine members, with the two female shareholders being incorporated.

Housing problems, such as a lack of toilet facilities and electricity was put forward as indicators of whether basic needs were being met (Table 6.12). The bad quality of the housing on Warmwater is a factor of utmost concern to all on Warmwater. The lack of sanitation facilities posed a health hazard and it was very unhygienic and uncomfortable, especially during winter. Septic tanks were one suggestion to assist with the lack of toilet facilities Recreation facilities, especially for children, as well as a community hall for church services, meetings, and social gatherings are important

needs on the farm. Currently, the main house is used for meetings and church gatherings, but there was a serious lack of recreation facilities for children. Transport is another big problem and the lorry is usually used to transport people to the doctor and to buy groceries in Montagu. Many people indicated that they would prefer to have their own transport to do their shopping and also to visit their families in the holidays.

| THEME: HOUSING AND BASIC NEEDS | | | |
|---|---|---|---|
| INDICATOR | HOW WOULD YOU MEASURE IT? | WHO WOULD MEASURE IT? | HOW OFTEN? |
| toilet facilities: toilet | times that have to use the bushes | family | daily |
| warm water: geyser | electricity | plumber | once |
| electricity: family | candle light | family | every day and night |
| bedrooms | amount of rooms | owner of house | daily |
| ceiling: roof | rain, bats fly in | family | every day |
| land for a garden | flowers and vegetables | family | every day |
| washing facilities | sunshine and rain | woman | every day / once per week |
| drainage: septic tanks | soil | builder / plumber | once |
| recreation for children: playground and hall | building | self and builder | once |
| education and training for women and men: work and income (food, clothes) | education - qualified - more income | employer | once |
| television room: receivers | stations e.g. MNet | self and electrician | once |
| water: drinkwater tank | above ground | self - owner | once |
| crèche: children | work (woman) | management and woman | daily |
| transport | buying groceries | self | weekly |
| insurance | accident - paying out | management and doctor | as necessary |
| insurance: group covering | proof / contract | self | monthly |
| pension | proof / contract | self and employer | monthly |
| medical funds | take out a policy | self | once |

Table 6.12: Indicators of housing and basic needs (Field research, 4 June 1998)

Education and training was regarded as an important basic need. With the

acquisition of educational qualifications, the group felt that they might then qualify for an increase in salaries. While the salaries of the group remained the same as what they had earned on Killarney, many felt that this was still too low. Insurance cover and medical aid was also seen as important as people were not sure what they would get should they retire or fall ill. This has important implication for Nuwe Begin, who had stated that security, incorporation income, health, housing issues, were one of the main objectives which they had hoped to gain from engaging in the land reform process (Isaacs and Magobolo, 1995). The group felt that they could identify with these indicators (sanitation; recreation; improved housing), as they were vital in assessing whether important needs were being addressed on the farm.

GROUP B: RESOURCES

Resources were divided into two parts, natural resources (e.g. water, soil) and other inputs such as irrigation, fertiliser and pesticides.

| THEME: RESOURCES - WATER | | | |
|---|---|---|---|
| INDICATOR | HOW WOULD YOU MEASURE IT? | WHO WOULD MEASURE IT? | HOW OFTEN? |
| colour of water | see / salt layer form on soil | everyone<br>bad - expert | daily |
| taste water | brackish | everyone<br>bad - expert | daily |
| rainfall (amount) | rainmeter | everyone | often, after rain |
| trees that die e.g. black wattles | see it happen | everyone | summer months (little water) |
| wind dries the irrigated areas | look at irrigated areas | water operator, expert | often, daily |

Table 6.13: Indicators of the 'health' of water resources (Field research, 4 June 1998)

Water was identified as one of the most important inputs into fruit farming and the group felt that the low rainfall recorded for 1997 was a big factor in the poor harvest in the 1997/1998 season. There was also concerns about the quality of water obtained from the boreholes on the farm as it had been noticed that the trees irrigated with water from the boreholes have rust forming on their barks (Table 6.13). The indicators would give them an idea of the water quality (colour and taste) and if the problem is very bad, an expert could be called in to help solve the

problem. The amount of water available for agriculture and domestic use was also important, both during the summer months (some trees have died) and also after the rains. The group felt it would be important to look at whether water is being taken up by the tree or lost through evaporation. Does the wind blow the areas dry or does the water reach the tree? They were aware of an instrument which could measure how well water and nutrients are being taken up by a tree and felt that an expert should examine this regularly - water must be used effectively (Plate 6.6.).

| THEME: RESOURCES - SUNSHINE | | | |
|---|---|---|---|
| INDICATOR | HOW WOULD YOU MEASURE IT? | WHO WOULD MEASURE IT? | HOW OFTEN? |
| trees wilt and the sun burns the fruit | see | everyone | summer months |

Table 6.14.: An indicator of an energy resource (Field research, 4 June 1998)

Sunlight was seen as an important resource but has often caused damage to the fruit or wilting of leaves (Table 6.14.). The group felt that the amount and strength of the sunlight was an important issue as this would have a big effect on the quality of the fruit which are picked in the summer months. One way to ensure that the leaves do not wilt and that fruit is not prone to drying is to keep the soil moist. This could be achieved by employing effective irrigation methods or by keeping the soil covered in the summer months.

| THEME: RESOURCES - ANIMALS | | | |
|---|---|---|---|
| INDICATOR | HOW WOULD YOU MEASURE IT? | WHO WOULD MEASURE IT? | HOW OFTEN? |
| bee hives full / empty | see | everyone | July / August (trees in bloom) |
| test animals (sheep and cattle) for illness | see health of animals | self, veterinarian | every 3 months, veterinarian |

Table 6.15.: Indicators of the 'health' of animal resources (Field research, 4 June 1998)

Animals form an important part of Warmwater. Many members of the group have sheep or cattle and a veterinarian visits the farm on a regular basis to inoculate the animals and to give advice on the treatment of animals. He also advises them on caring for the many pets found on the farm, almost every household has either a cat

or dog, in some cases both. Bees play a vital role in fruit farming as the beehives which are found on the farm are placed in the orchards when the trees bloom (Table 6.15.). The bees pollinate the fruit trees and also provide honey to the farmers, who collect it for household use.

| THEME: RESOURCES - SOIL | | | |
|---|---|---|---|
| INDICATOR | HOW WOULD YOU MEASURE IT? | WHO WOULD MEASURE IT? | HOW OFTEN? |
| amount of soil that washes away | see | everyone<br>bad: expert | after the rain |
| soil profiles (how deep has the soil been ploughed) | see | everyone, soil scientist | after the harvest |
| colour of soil | see (black - fertile) | everyone | as we work with the soil |
| roads wash away | see | everyone who lives in those areas | after the rain |

Table 6.16: Indicators of the 'health' of soil resources (Field research, 4 June 1998)

Soil is an important resource on the farm and the group felt that two of the main indicators of the 'health' of soil would be soil colour and the soil profile (Table 6.16.). The colour of the soil would provide an indication of soil fertility, while the soil profile could be established by digging soil pits in the orchards to ascertain the depth to which the soil has been prepared. This is important as the farmers had become painfully aware of the cost involved to repair incorrectly prepared soil. The amount of soil lost though erosion is also important as the top layer of soil is the most fertile and this would affect how well the trees grow. The loss of topsoil, especially from the orchards planted on the steep hills on the farm could possibly be a big problem and the group were not aware of ways in which they could prevent this. I was also told that trees which had been planted near to the river had been washed away during the previous winter as riverbanks collapsed. Another issue, related to soil management, pertained to the quality of the gravel roads. One of the roads had been severely eroded and posed a hazard to the tractors which use the road (Plate 6.7.).

Knowledge about soil resources was an important indicator of the technical education needed on Warmwater. The group was aware of the problems that incorrect soil preparation had caused on Warmwater - they had to replace the

orchards in the near future. They therefore saw the need to increase their knowledge and understanding of soil resources, not only on soil preparation but in preventing erosion and rehabilitating degraded areas.

| THEME: RESOURCES - PLANTS | | | |
|---|---|---|---|
| INDICATOR | HOW WOULD YOU MEASURE IT? | WHO WOULD MEASURE IT? | HOW OFTEN? |
| topsoil washes away and ground is bare | See | everyone | after the rain |
| number of trees which die (water runs off) | Count | everyone | before the trees bloom (July - Sept.) |
| rust on trees (especially in borehole areas) | see | everyone | right through the year |
| branches that break (strong wind or heavy fruit / trees are old) | see, annual rings should be counted | everyone sees the branches that break, expert | daily and during the harvest time |
| amount of trees with rust-leaves (due to too little water/ mineral salts - spray) | see | everyone that works | harvest time |
| shiny leaf / silver leaf (sickness) | see | everyone | harvest time |

Table 6.17: Indicators of the 'health' of plant resources (Field research, 4 June 1998)

The indicators on plants were developed mostly on the 'health' of the fruit trees, of which the group had a lot of knowledge (Table 6.17.). Many other vegetation types, such as fynbos and some grazing species are also found on the farm. However, the indicators dealt with the signs which the farmers used to assess whether the fruit trees are growing well. These include assessing whether the ground is bare, in which case topsoil is washed away and the trees don't grow well (nutrients are lost). There are also several diseases which are looked at, e.g. rust on the leaves or silver leafs which are usually picked up while farmers work in the orchards. These diseases can on occasion be remedied by adding certain types of nutrients to the soil or spraying with pesticides. However, some diseases can be fatal to the trees. The group felt that the trees were very old and that most have passed their production peaks, some are reputedly 52 years old. Though they have not counted the annual rings of the trees, they believe that the trees are very old as fruit trees should normally be replaced every 15-17 years.

| THEME: RESOURCES - PESTICIDES | | | |
|---|---|---|---|
| INDICATOR | HOW WOULD YOU MEASURE IT? | WHO WOULD MEASURE IT? | HOW OFTEN? |
| sickness of trees - certain pesticides | expert look at trees | expert | weekly |
| see whether pesticide works - sickness disappears | see | pest management (Elias / Piet) | after spraying |
| wind strength / warm sun - pesticide does not work | see | everyone and pest management | poor weather conditions |
| people in orchards - don't spray | see | pest management | during spraying |
| no clothes / protection | see | pest management | during spraying |

Table 6.18: Indicators of the wise use of pesticides (Field research, 4 June 1998)

One of the members of the pest management team on Warmwater was a part of the group and he generated most of the indicators for this component. For example, certain diseases require particular pesticides and weather conditions play an important role on the timing of spraying. Also, it is important to ensure that there are no workteams in the orchards during spraying (Table 6.18.). Another important issue is the availability of protective clothing and washing facilities for the operators, for example facemasks, gloves and overalls. It was quite shocking that protective gear was not used on the farm as these should be standard procedures under health and safety legislation.

| THEME: RESOURCES - FERTILISER | | | |
|---|---|---|---|
| INDICATOR | HOW WOULD YOU MEASURE IT? | WHO WOULD MEASURE IT? | HOW OFTEN? |
| growth of the tree after application of fertiliser | see | everyone and management | September and after harvest (April) |
| work of certain salts (e.g. potas) | see if tree grows | everyone and management | October - before harvest |
| number of leaves on ground - keeps ground moist | ground stays wet longer | everyone | autumn months |
| orchards in steep areas - fertiliser and soil runs off | see | everyone | after the rain or irrigation |

Table 6.19: Indicators of the wise use of fertilisers (Field research, 4 June 1998)

Fertiliser is used twice per year, just prior to and after the harvest season. It is an important and costly input and the effect of fertilisers on the growth of trees has to be assessed (Table 6.19.). The concern with the level of soil erosion observed in steeply sloped orchards, was echoed with regard to fertilisers which could also be lost in this manner. It is therefore important to ensure that a method is found to prevent the soil and fertiliser to be lost and washed away in these areas. In addition to fertiliser, the leaves lost during autumn also protect the soil from running off and could provide nutrients to the soil as well.

| THEME: RESOURCES - IRRIGATION | | | |
|---|---|---|---|
| INDICATOR | HOW WOULD YOU MEASURE IT? | WHO WOULD MEASURE IT? | HOW OFTEN? |
| look at equipment (check for faults) | let the water run | water management (Willem Markus) | regularly |
| water pumps of boreholes | put it on | water management | every 2/3 day |
| pipelines in orchards | see whether water comes out of pipes | everyone | when irrigate |
| how long does the water run | see | water management | varies e.g. half day or whole day |
| how far is the spitter from the tree | see or measure with eye | water men | daily |
| level of dams | See | everyone | daily |

Table 6.20.: Indicators of effective irrigation (Field research, 4 June 1998)

Warmwater's water manager, Oom[7] Willem Lamberts, a member of Group B, provided most of the indicators to assess whether irrigation is occurring in an effective manner. The indicators included regular testing of irrigation equipment, such as water pumps and pipelines - this would ensure that leakages are picked up and repaired in order for wastage to be prevented (Table 6.20.). It must also be insured that when the water is supposed to be irrigating for half a day, that it runs its full course. The distance of the water sprayer from tree is also important to ensure that the water reaches the trees. As the farm irrigates for 10 months of the year, the level of the dams must be monitored constantly so that any problems can be planned for (Plate 6.8.).

The two groups reconvened and representatives presented the indicators. Thereafter

[7] An Afrikaans term, synonymous to Uncle, used to address an elder.

the groups were given an opportunity to decide whether they wanted to add or delete any of the indicators. However, no substantial changes were made. I then explained that the following day would conclude the research and that we would discuss the ways in which indicators could be used on Warmwater. We spoke specifically about the fact that indicators would not necessarily provide solutions and that it could identify possible problems, but that the solutions would have to either come from their own knowledge, or from the advice of experts. We also spoke about the worth of the research for the group and they felt that it had benefited them greatly.

### 6.2.3. Phase three: Applying the research

This phase involved a discussion of the research process and of sustainable agriculture. The research exercises which had been conducted were displayed in a chronological order in order to map out the route we had followed in developing indicators (Field research, 5 June 1998). Thereafter we spoke about the indicators and how they would serve as an indication of whether the various components of Warmwater were in a good condition. Sustainability, I had explained, requires that all the aspects of a particular component be considered, for example the sustainability of a resource such as soil would be determined by a number of factors, such as education, technical studies and finances to improve soil management. This would mean that the sustainability or health of one factor, such as soil, could be ascertained through a range of indicators, thus forming a composite or sustainability indicator.

I presented a short history of my research into sustainable agriculture and some of the methods used. I mentioned that converting to sustainable agriculture is a slow process and though I would encourage that they investigate the different methods used, my research at Warmwater dealt primarily with informing them of the need for these methods. Thus, I basically wanted to assess whether indicators could be used to monitor their progress towards sustainability. An important question for the group to ask themselves is whether sustainability is an important goal on Warmwater? During the research process we spoke about sustainability and I had explained that it incorporated economic, ecological and social issues. The group accepted that sustainability was important, still they had to establish its importance and relevance for Warmwater. If it is a goal on Warmwater, where on a scale of one

Plate 6.7.: The badly eroded farm road

Plate 6.8.: Indicators were developed on the wise use of fertiliser and on effective irrigation, 4 June 1998

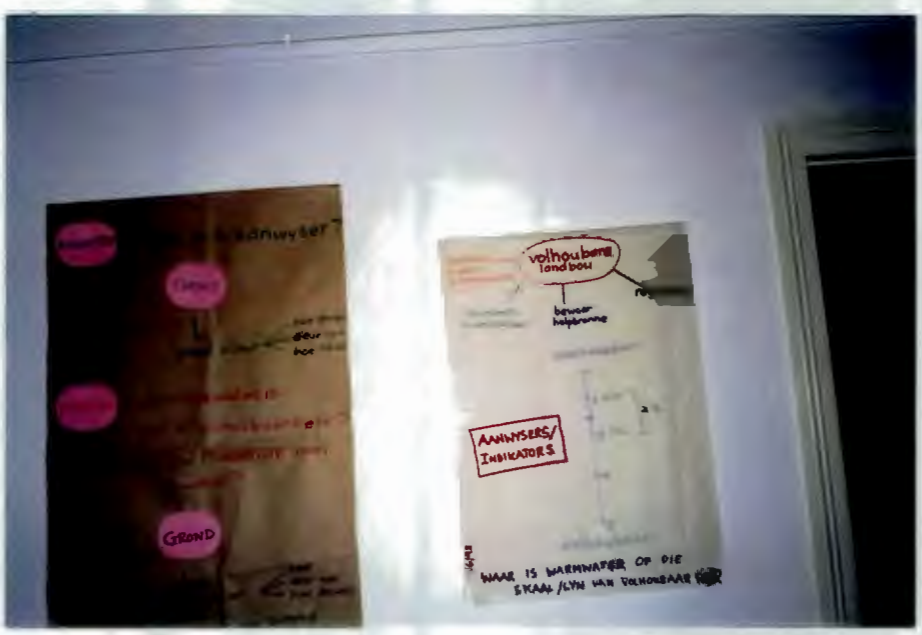


Plate 6.9.: The sustainability scale used to 'rate' Warmwater

to five (where 5 represents sustainability and 1 unsustainability) do they fit? One person said two and another three and the group said that Warmwater had to be given 2½ (Plate 6.9.).

We continued to speak about sustainability and the group said that they hoped that they would one day reach 5 or even 10 as one person had said. I then asked them to assess the research process and each person was given a card to write his/her feeling about the research - I especially asked the group to record both positive and negative feelings so that we could learn from this experience. The farmers all gave very positive indications on the research and said that it was " very valuable", that they "learnt to farm sustainably" and that "it's going to help in the future" (Field research, 5 June 1998). The group felt very positive about the research and I had asked them whether there were not any negative feelings but they said no. I thanked the group on behalf of myself and Wendy for the opportunity to do the research with them. We especially thanked them for sharing their knowledge about farming with us. It was agreed that a summary report, detailing the research thus far, would be submitted to them by the end of July. The report, detailing the research, was sent to the WFT at the end of July for their comments (Mohamed, 1998). In particular, this was done to ensure that the material collected, accurately reflects the research which had been conducted. In addition, the charts (timelines, problem analysis and indicators) were returned to the WFT for their use on the farm.

## 6.3. THE WAY FORWARD

In order to discuss the implementation of a participatory monitoring process on Warmwater, subsequent meetings were held with the farmers. The first was to discuss the report and to find out whether there were any problems with the summary report. The second meeting/workshop, was to discuss how the research could be taken forward on the farm. The first meeting, held on the 10 August 1998, dealt with issues that the farmers wanted to be tabled at the forthcoming trust meeting. It also gave me an opportunity to find out whether there were any comments on the report. It was agreed that a separate meeting, dealing only with the findings of the research and a way forward, be held. This took place on the 24 August 1998.

Initially an overview of the research was presented (Field research, 24 August, 1998). This catered specifically for the women who had not participated in the research, but who were now employed on the farm to prepare the orchards for the harvest. Of the six women present, I had interviewed three. Examples of the exercises were shown to the women, as well as the way in which some of the comments women had made, were incorporated in the report. The report was available for them to read and I requested that all comments on the report be forwarded to me. The main issue which we proceeded to discuss was whether the research could be used on Warmwater. Could indicators monitor progress? Are the indicators developed relevant, useful, easy to understand? The first question that was asked was whether the indicators responded to the goals of the farm. It was difficult for some of the farmers to talk about the goals of the project, especially as few of the original aims had been reached thus far. Poor housing, wage disputes and an uncertainty of their role in managing the farm were some of the problems which they had to contend with. Nevertheless, after a great deal of prompting, several of those present started to speak about the goals of Nuwe Begin on Warmwater. These included securing a better future for their families, work opportunities, improved quality of life (housing, salary, health and education) and an opportunity to work together for their future. It is this spirit of *samewerking* ('working together') that they wished to leave behind for their children. What all were agreed upon was that Warmwater had represented something different to Killarney. It presented more than an income and a house - it promised a better life.

If the indicators could serve as signs of sustainability or 'health' of their farming system, are the above-mentioned goals in tune with sustainability? I briefly told the farmers about worldwide interest in sustainable agriculture and the various methods which farmers employed, such as organic farming and low external-input sustainable agriculture. Although I would strongly motivate that they investigate the viability of some of these methods on the farm, the motivation of my research was not to advocate the adoption of one of these methods. Rather, it was about introducing the basic principles of many of these methods. We proceeded to discuss these principles and its relation to the goals of Warmwater. I presented the main principles of sustainable agriculture as wise use of natural resources; improvement in quality of life; participation in planning and decisionmaking processes and a greater independence from inputs, such as fertilisers and pesticides. Participation would also incorporate more than consultation, it would involve notions of

empowerment and capacity building. We discussed each of these principles, which participants felt concurred with the goals which they had formulated earlier. Thus, in order to move towards 'health'/sustainability/success on the farm, is there a place for monitoring progress, using the indicators which we had developed as a starting point?

Throughout the field research, participants agreed that the research had been useful. The example of orchard monitors, implemented in the deciduous fruit industry was cited to show that monitoring progress / health could move from being unconscious to a more conscious system (*Deciduous Fruit Grower*, 1998). On Warmwater however, not only orchards, but the well-being of people and of the farm in general, will be monitored. If working together on Warmwater constituted an essential ingredient for success, could monitoring facilitate participation in decisionmaking? We then entered into a long discussion on the perceived 'gap' which sometimes exist between farmers' needs and the decisions taken by the trust. Nevertheless, the management team consists of elected members of Nuwe Begin, people in which the farmers had placed their confidence. This should not preclude farmers' involvement in decisionmaking processes. However, I had observed that despite efforts by management to involve farmers in these processes, most displayed an unwillingness to attend managerial meetings. Monitoring could present one way in which to keep farmers in regular contact with management, thus ensuring that their concerns are not only put on the agenda, but actually followed-up with action. At this stage, some of the women commented that many of the concerns which they had raised (lack of work opportunities on the farm, the need for a crèche, and the safety of their children), had been tabled months earlier. Thus far, it has not been addressed. Is monitoring a way to ascertain progress and achieve action?

A proposal by one of the farmers, seconded by another, suggested that a monitoring team be formed on the farm which will involve the election of men and women on the farm to accept the responsibility for monitoring the different aspects of the farm. Secondly, it was decided that neither the components, nor the indicators were 'set in stone', they could be changed, added to, removed or refined. It was felt that as the monitor became more knowledgeable in his/her component, for example water quality monitoring, he/she would learn of new ways to test that component. At this point, one farmer noted that such a process could revive the *samewerking* which had been eroded. It could help improve people's confidence and ensure that

farmers' concerns were being addressed. Another benefit included training monitors in their respective components, thus enabling better monitoring. Examples included training in integrated pest management (IPM), irrigation technology and soil and water conservation methods. Monitoring represented a way to the farmers to check their progress towards 'health' or sustainability in a step-wise manner. It could greatly assist them in finding out whether they were achieving an increase in their quality of life, managing natural resources wisely, participating in planning and decisionmaking and achieving *samewerking*. I proposed writing-up the minutes of the meeting, which was subsequently sent to management.

Monitoring does occur on an informal, unconscious basis. Transforming this process into a more systematic, participatory procedure could ensure that the farmers maximise their participation in the land reform process. In the next chapter, I will be discussing the value of a participatory monitoring system in general, and indicators in particular in the creation of sustainable farming systems which are based on the premise of social and environmental justice. Furthermore, I will locate participatory monitoring within the broader structural landscape of land and agrarian reform in South Africa in general, and the Western Cape in particular.

# - CHAPTER SEVEN -

# MONITORING TRANSFORMATION AND AGRICULTURAL SUSTAINABILITY: THE VALUE OF INDICATOR-BASED PARTICIPATORY MONITORING

> Participatory monitoring shifts the emphasis away from externally-defined and driven programmes and stresses the importance of locally-relevant processes for gathering, analysing and using the information...Thus, monitoring moves away from being an activity undertaken for, and by outsiders, to one that builds on community activity and increases its capacity to analyse and record local conditions.
>
> (Abbot and Guijt, 1998, 20)

The participatory monitoring process initiated on the farm, the Warmwater Farming Trust (WFT), was conceived as a tool to monitor social and agrarian change at the farm level. The extent to which this process achieves this goal over time, depends largely on how it relates to the 'bigger' picture. Lipton (1996) has described some of the international constraints to agricultural development, for example the decreased focus on agricultural development vs. industrial concerns, reflected in urban-biased policies. Anti-agriculture biases have also been observed in sub-Saharan Africa, for example research conducted on the Namibian land question indicates that the free market or neo-liberal ideology, which dominates much development discourse on the continent, predicates against the substantive land reforms needed in Namibia (Pankhurst, 1995). In Chapters Two and Five, a number of criticisms that have been levelled at South Africa's land reform programme were revealed. The participatory monitoring process must be evaluated within these structural contexts if it is to contribute to fundamental social change.

The field research on Warmwater provides many lessons for the land reform process, both as an example of a farm worker equity share (FWES) scheme and in exploring the value of participatory monitoring in transforming farming systems. Farm worker participation schemes represent a land reform model which is gaining favour, particularly in the deciduous fruit industry of the Western Cape. However, the development of commercial agricultural production, despite its prosperity, has contributed to environmental degradation, as well as extreme social and economic inequalities. Given that social transformation and agricultural sustainability are key

goals of the land reform process, policies and practices aimed at instituting meaningful change require further investigation. Participatory monitoring, represents one way in which to popularise agricultural sustainability; motivate for changes in conventional practices and increase participation in decision-making processes. Monitoring, when applied to land reform projects, would therefore provide a valuable insight into the transformative abilities of an essentially political process.

In this chapter, I will assess the value of indicator-based participatory monitoring for the WFT, while discussing both the process and product which evolved from the field research. I will also consider the benefits and constraints of a participatory monitoring system for land reform, specifically with respect to the development of FWES schemes land reform model in the Western Cape; the promotion of sustainable agriculture; and the confluence between sustainable agriculture and environmental justice considerations in South Africa. I conclude this chapter by drawing on the lessons of the WFT's participatory monitoring process for ensuring that the land reform process in South Africa develops along an equitable and environmentally sustainable path.

## 7.1. THE ROLE OF INDICATORS IN PARTICIPATORY MONITORING: THE CASE OF THE WARMWATER FARMING TRUST

The field research and informal discussions with the various actors involved in the WFT afforded me with an opportunity to investigate the viability of indicators as a tool to monitor progress towards sustainability. The goals of the WFT are in line with many of the principles of sustainable agriculture, such as the wise use of natural resources, enhanced quality of life and participation in planning and decisionmaking processes. Yet very few practical applications, in the form of environmentally sustainable, energy-efficient farming methods are in place at Warmwater. This could be attributed largely to the lack of sustainable farming systems in the Western Cape, as opposed to a lack of interest by the farmers. Aside from Integrated Pest Management (IPM) applied widely in the deciduous fruit industry (Rencken, 1997), very few agricultural sub-sectors in the Western Cape have embarked on any radical changes relating to agricultural technologies. In discussing the goals and problems on the WFT, the farmers revealed a deep

understanding of the various components on the farm and the inter-relationships which shape their particular farming system. The field research sought to determine the usefulness of indicators in transforming such farming systems.

How would the indicators help the farmers of the WFT? Firstly, farmers said that the indicators could play a role as warning-signs or pointers which could alert them to problems on the farm. There was a general agreement that solutions have to be developed either from the knowledge-base at hand, or by drawing on experts such as soil scientists. This was pointed out by the farmers on several occasions when we spoke about who would measure indicators. The farmers felt that measuring certain indicators were within their capabilities, other assessments required more detailed measurement - this applied specifically to natural resources. Secondly, there is definitely a need to focus specifically on one or two components, such as soil and water to determine the full extent of the local knowledge base further. Although this research was aimed at addressing the farming system in a holistic manner, it was recognised that issue-specific research, for example on water quality monitoring, was needed. This would greatly develop the technical proficiency of farmers and enable them to participate more actively in planning and decisionmaking exercises. The third issue raised by the indicator workshops is capacity building, especially through appropriate education and training opportunities. Farmers indicated an eagerness to obtain more technical knowledge on trees, water and soil management, as well as financial management skills. By equipping them with the skills to participate more effectively in the decisionmaking processes on Warmwater, land reform would initiate the much-needed changes required on Western Cape farms.

The indicators which were developed by the WFT are generally location-specific, i.e. they focus on the farm and deal with the problems farmers are currently experiencing. For example, many indicators dealing with the state of housing was developed, which points to the current concerns. However, should housing be improved, what indicators 'measuring' the quality of housing provision, would take its place? This issue was discussed at a workshop in which farmers agreed that the indicators would not only be expanded as their knowledge on a subject increased, but could be modified as changes occurred (Field research, 24 August 1998). Despite its focus on local conditions, the field research revealed that the farmers viewed natural resource management, social development and increased participation as a part of the search for sustainability on the farm. Indicator-based

participatory monitory processes have been implemented successfully as Noponen's pictorial diaries of change (1997) and Deutsch's water quality indicators (1998) indicate. In evaluating the indicators developed at Warmwater, I have drawn particularly on research done by the International Institute for Environment and Development (IIED) on participatory monitoring (Abbot and Guijt, 1998).

Abbot and Guijt (1998) set out a series of steps for initiating participatory monitoring processes. They have noted that these steps do not represent a linear process, nor does it preclude the use of various methods of measurement, rather it is an iterative process which responds to the availability of local resources and specific needs. For example, the formulation of objectives within the indicator identification process could occur either before or after indicators were identified. On Warmwater for example, the indicators were based on the various components of the farming system, identified by the farmers (Field research, 27 May 1998). It was only in subsequent field research exercises that objectives were discussed *vis a vis* its relation to the objectives of sustainable agriculture. By examining the key steps in indicator-based participatory monitoring (Table 7.1.), as well as the criteria for good indicators provided by Abbot and Guijt (1998), I will evaluate the merit of the indicators developed by the farmers in terms of its usefulness for the WFT (product) and as a model for other communities (processes).

**KEY STEPS IN INDICATOR-BASED PARTICIPATORY MONITORING**

Make the decision to start a participatory monitoring process

↓

Identify possible participants

↓

Identify the objectives of the monitoring process from the perspectives of each of the participating groups

↓

Identify, select and implement indicators

Table 7.1.: Developing an indicator-based participatory monitoring system (Source: Abbot and Guijt (1998))

What are the key steps in indicator-based participatory monitoring and to what extent were they followed in the Warmwater field research?

### 7.1.1. Have the 'key steps in developing an indicator-based participatory monitoring system', been followed?

Before evaluating the field research process, it is important to state that the initial interest in investigating the viability of a participatory monitoring system was initiated by an outside researcher. I had approached the WFT to ascertain their interest in the research and to find out whether it would be of use to them. Farmers' participation was initially premised on this interest, but increased substantially during the field research exercises. Gradually, my role became more one of a facilitator and less of the director or initiator of the questions. Farmers provided very positive feedback on the field research and also felt that the research had re-opened the channels of communication between the members of Nuwe Begin (Field research, 27 May 1998). Importantly, they felt that participatory monitoring presented a positive way to address their concerns. Although the monitoring process is still in its early stages, I will be writing a full report to the WFT on the benefit of the research for the farm (Mohamed, forthcoming). The field research process of developing indicators incorporated many of the 'key steps' recommended by Abbot and Guijt (1998) (See Table 7.1.).

*Make the decision to start a participatory monitoring process.* The decision to initiate the process was ratified by the farmers in their desire to monitor their progress towards well-being / sustainability (Field research, 27 May 1998). A proposal by one of the farmers to initiate a monitoring team, consisting of both men and women, to monitor the various components of the farm, was also made at a subsequent workshop (Field research, 24 August 1998). The proposal was seconded by another farmer. The farmers felt that such a process would assist them in ensuring that their concerns were brought to the attention of management; would help them in monitoring their progress and pick up problems; and help them to re-establish the *samewerking* ('working together') which had characterised Nuwe Begin. Despite farmers' participation in and acceptance of the research, the implementation of a participatory monitoring system requires the support of New Farmers, the majority shareholder in the WFT. This would ensure that a closer working relationship be established between the members of Nuwe Begin, based on Warmwater and the New Farmers Development Company. Participatory monitoring

could therefore contribute to strengthening the relationship between the members of the WFT (Figure 6.2., Chapter Six).

*Identify possible participants.* The participants in the research were primarily the members of Nuwe Begin residing on Warmwater. These farmers, consisting mainly of the shareholders in Nuwe Begin, participated in the various field research exercises. Interviews with the other partners in the WFT also formed an important part of the research. It is important to note that during this period, many women were working on a nearby flower farm and were therefore unable to participate in the exercises. Of the 17 shareholders in Nuwe Begin living on Warmwater, only two are women. Interviews were thus held with women to supplement the problem analysis and indicator identification exercises (See Appendix A). As Table 6.10. (Chapter Six) shows, indicators on monitoring the well-being of women and children were developed during the field research. Subsequent interviews with the women of Warmwater confirmed many of the underlying themes identified in the indicators, such as the need for a crèche and off-season employment opportunities for women.

Despite marked differences in educational levels, as well as some language differences, all the farmers understood and spoke Afrikaans. My own Afrikaans, having grown up in an Afrikaans-speaking community, is very good and I communicated very easily with the farmers. All the field research exercise reports, as well as reports to the WFT, will therefore be in Afrikaans. Some of the participants were also not literate and were assisted by other farmers, or myself and a research assistant, to formulate their inputs. However, only the first stage of the research, problem identification, required writing. Most of the research was conducted in a workshop format.

Of the 17 shareholders on the farm, the majority participated in all the field research exercises. Occasionally, unforeseen circumstances, such as illness, kept some of the participants from attending the field research. Aside from being predominantly male, the participants were skilled in a range of activities on the farm, such as mechanical work, pruning and pesticide application. The hierarchical management structure, present on most other farms, assumes a total different structure on Warmwater. Workteam supervisors are not viewed with suspicion, but occupy a more open, accessible and egalitarian position on the farm. Findings of the

participatory rural appraisal (PRA) exercise by Isaacs and Magobolo (1995), highlighted the good working relationship between the members of Nuwe Begin. This trust enabled the group to pool their resources (personal savings and DLA settlement grant), thereby increasing their buying power to purchase Warmwater. As much of this *samewerking* was seemingly being eroded, both farmers and the women of Warmwater had mentioned that the participatory monitoring process could assist in rebuilding the relations between farmers (Field research, 24 August 1998).

*Identify the objectives of the monitoring process from the perspective of each of the participating groups.* Although the farmers were the main participants in the research, interviews were held with both of the other members of the WFT, Sighardt Gaugler and a representative of New Farmers (Appendix A). They were very optimistic about the research and felt that it would be of great benefit to the farmers by increasing their ability to partake in decisionmaking. During my early meeting with the farmers, they indicated an interest in monitoring their progress and in participating in the research. It was only during the actual field research that farmers began to realise more fully the benefits of the process in terms of their own objectives. They were very enthusiastic about the research and the fact that the exercises enabled them to table their concerns and pool their knowledge on the farm. The objectives of Nuwe Begin were only discussed much later, while discussions around the principles of sustainable agriculture occurred throughout the research. This was later compared to the objectives of Nuwe Begin and found to be very similar. Objectives, such as sound environmental management, economic viability and social justice, were important to the farmers. However, a schism exists between objectives and practice, a dichotomy which will be discussed in Section 7.2.2..

*Identify, select and implement indicators.* This is a crucial step in the participatory monitoring process and involves selecting appropriate methods for measuring/ assessing indicators, deciding on the frequency and timing of monitoring and beginning to consider implementation of the monitoring process. As the field research was intended to investigate the viability of indicators in participatory monitoring, some time was spent on explaining how indicators could be used on the farm. Problem analysis (Field research, 26 May 1998) and the identification of the various components of the farm (Field research, 27 May 1998), laid the foundation

for the development of the indicators. Thus, we attempted to monitor the various components of the farm in a holistic manner, looking at both social development, financial and natural resource management issues. I will be discussing the procedures involved in formulating indicators (what, how, who, when) below, however it should be noted that the methods used to measure indicators were mostly restricted to physical observation. Farmers later identified training as an important requirement to enhance their abilities to monitor more effectively. For example, the two pest managers were interested in attending an orchard monitoring course which would involve a range of issues, such as the detection of pests and planning spray regimes. Thus, throughout the indicator identification stage, farmers were discussing ways of identifying 'better', more detailed indicators - thereby signifying an opportunity for a closer relationship between farmers and researchers.

Implementing the indicator-based system would be the next step in participatory monitoring and would involve collecting, analysing and presenting data; re-working indicators (measurement methods, timing); and applying a participatory monitoring system on Warmwater. This is in essence an iterative process and one which the farmers were very keen to embark on (Field research, 24 August 1998). It was felt by farmers that training would assist them in identifying additional indicators, new measurement techniques and an increased ability to effectively monitor progress towards sustainability on the WFT. A process of lobbying and motivating for the implementation of a participatory monitoring process still needs to be undertaken. Although management was informed of the proposal to implement such a system on Warmwater (Field research, 24 August 1998), a detailed community report will be submitted to the WFT, stating the case for a participatory monitoring system for sustainable agriculture (Mohamed, forthcoming).

Monitoring was not foreign to the farmers, due to the widespread use of the concept of an 'orchard monitor' in the deciduous fruit industry (*Deciduous Fruit Grower*, 1998). It was also a process which many felt they had engaged in on an informal basis. Thus, many of the indicators developed by the farmers, needed to be monitored on a daily basis, for example evaluating whether farmers were achieving their targets during harvest time (Table 6.6., Chapter Six). Transforming this unconscious checking to a systematic process has benefits, such as ensuring that problems are addressed more effectively (farmers stated that concerns had been

tabled, but had never been addressed); participation in decisionmaking is increased; and the needs of all the residents on the farm, are taken into account.

Overall therefore, there seems to be several strong advantages to indicator-based participatory monitoring. The process of using participatory research and involving the farmers in identifying indicators could test whether Nuwe Begin's goals were being met, well-being was increased and natural resources being utilised sustainably. It gave the farmers an opportunity to share their knowledge and to identify a diagnostic kit which would improve their management of the farm. There were also some important flaws in the participatory research process on Warmwater.

Despite attempts to maximise the level of participation in identifying indicators, an on-farm analysis of the indicators, specifically related to its use on Warmwater, has not been undertaken. This has been mainly due to the constraints which I faced, mainly financial, of visiting the farm on a more regular basis. It therefore brings two important considerations to the fore - the degree of participation in the analysis of field research findings and the scope for the implementation of the process in practice. According to Pretty, there are many interpretations of participation from the view of involving people to achieve efficiency to initiating interactive participation "in which the main aim is to initiate mobilisation for collective action, empowerment and institution building" (Pretty, 1995b, 1251). The research methods which I adopted all share the notion of interactive participation. Participatory rural appraisal (PRA) seeks to reverse "the knowledge, categories and values of outsider professionals to those of insider local people" (Chambers, 1994b, 1262), while at the same time re-orienting the role of the outsider professional. Outsider professionals now interact with communities as learners, catalysts and facilitators, engendering an attitude of respect for local people (Cousins, 1993). Farming systems research and extension (FSR&E) incorporates a holistic framework of analysis and possesses tools which include multi-disciplinary teams, farm-level interventions and farmer participation (Butler Flora, 1992). Sustainability indicators could also be used to facilitate community action at the local level and facilitate empowerment (Oelofse *et al.*, 1997). Thus the research methods aimed to increase farmer participation. Although an on-farm analysis of the indicators was not conducted, this could form an important step in the implementation phase of the project. In addition, the final report to be submitted to the farmers will incorporate

recommendations on implementing the indicator-based participatory monitoring process on Warmwater (Mohamed, forthcoming).

### 7.1.2. Evaluating the indicators developed by the WFT

Many researchers put forward criteria for the development of indicators, which include scientific measurability, predictive capacity and the availability of reference or threshold values (Liverman *et al.*, 1988; Bakkes *et al.*, 1994; Deutsch *et al.*, 1998). Yet, an indicator system must be suited to the users and developed at the level which is understood by users. Though the above-mentioned criteria are very valuable, local-level indicator systems, implemented at the community level could assist communities in understanding their local environment better, implement change and monitor their progress towards sustainability. A number of indicator-based local-oriented studies are cited by Abbot and Guijt (1998), as well as other researchers (Nurick and Johnson, 1997; Pepperdine, 1998). The indicators which were developed are unique to Warmwater. However, the case study holds value in that a holistic assessment of a farming system was conducted. By using a system developed by Abbot and Guijt (1998), I will assess the value of the indicators in view of the purposes for which they were generated, i.e. to monitor progress towards sustainable agriculture and to enhance participation in decisionmaking processes.

The basic procedure followed in the identification of indicators (Table 7.2.) was firstly, the identification of the various components of the farm (Field research, 27 May 1996) and secondly, the division of the eight components which were identified between the two groups (Field research, 3 June 1998). Thereafter, the two groups set about identifying indicators which would provide a sign of the 'health' or sustainability of that component. Often, several indicators would be developed, as in the case of housing and basic needs for which 18 indicators were developed (Field research, 4 June 1998). The concepts of indicators and sustainability were introduced by using a metaphor, likening indicator development to the search for 'health'/sustainability. This served to familiarise the concept of finding signs indicative of well-being, for example in diagnosing an illness, a doctor would check certain for certain signs (pulse, throat, breathing). Similarly, they could identify signs of the health of Warmwater, and if necessary call in the service of a doctor cum-specialist (soil scientist, accountant, hydrologist), if a deeper analysis is required. This metaphor helped to simplify the concept of indicators and an

Afrikaans word, *aanwysers* (synonymous to indicators), was used. Abbot and Guijt (1998) confirm the necessity of developing locally meaningful indicators, by using a local term or word for indicator.

| INDICATOR DEVELOPMENT | |
|---|---|
| Problem analysis: | natural resource problems, such as water quality and quantity, trees, irrigation systems and incorrect soil preparation; |
| | ↓ |
| Identifying components: | resources, including both natural (water, soil, plants, animals) and other (irrigation, fertilisers, pesticides); |
| | ↓ |
| Identifying and selecting: indicators: | the group would firstly select one sub-component, such as soil or plants and then proceed to identify indicators which would provide a good sense of the sustainability of that component. They would also decide on how the indicator would be measured, who would measure it and how often. |

Table 7.2.: Procedure adopted in developing indicators of farm 'health' on the Warmwater Farming Trust

SMART (specific, measurable, attainable, relevant and timely), the acronym suggested by Abbot and Guijt (1998) as criteria for developing good indicators, was used to evaluate the indicators developed by the farmers on Warmwater. The indicators developed by the WFT were very *specific* to the local context. Formulated in relation to the main components of Warmwater, the indicators incorporated many of the essential components of farming systems (natural resources, housing and basic needs). In addition, the resulting indicators focused largely on the current concerns on the farm. Thus indicators on natural resources, such as water, trees and soil focused on the specific problems which the farmers of the WFT were experiencing, for example the quality of water drawn from the borehole, the age of trees and the high levels of soil erosion in some orchards (See Plate 7.1.) (Field research, 3 June 1998; Field research, 4 June 1998). Another example illustrating this point is the generation of indicators under the component, clothing and machinery (Field research, 3 June 1998). Farmers identified the specific parts of the

packing machine (axle, sprocket and chain) which had to be checked before harvest time as an indicator of whether the machine was functioning properly (Table 6.5., Chapter Six). Indicators on socio-economic issues, such as housing, also reflected the current concerns on Warmwater (Field research, 4 June 1998). Though some of the indicators developed focused on very specific issues (issue and time-specific), farmers felt that should indicators become defunct, alternative indicators would be developed. For example, any change such as a new packing machine, would therefore negate the use of the indicator checking the axle, sprocket and chain (machine parts). New indicators, relevant to changing circumstances would therefore be identified as the need arises.

How do we *measure* the indicators? During the feedback session of the indicator identification exercises, this was the first question asked by farmers. They were having difficulty in deciding what measurement to use. Although it was easy to measure certain components, particularly natural resources (water quality, the condition of trees and animals in the farming system), the social components were particularly difficult to measure. The components, women and children and housing and basic needs were identified as important components and measurement accrued to physical observation of indicators, for example was the need for a crèche tabled, counting how many roofs are leaking and how many women have jobs during the winter (Field research, 3 June 1998; Field research, 4 June 1998). The farmers engaged in specialist work on the farm, such as a motor mechanic, pest manager, water operator and farm administrator, were also more knowledgeable about certain issues than others. Thus, having one of these 'specialists' present in a group identifying indicators on their 'speciality', greatly enhanced the level of depth of that indicator. For example, the presence of the water operator in the group dealing with natural resources saw the development of indicators which focused on the efficient use of water, such as the distance of irrigation system from trees, the level of evapotranspiration and the degree of run-off (Field research, 4 June 1998). Coupled to the notion of measurability, was the desire by farmers to acquire further skills through training in agricultural production, literacy and other skills (Field research, 3 June 1998). The farmers did not possess many of the skills required for scientific measurement, such as soil and water analysis, but their desire to acquire such skills, as well as their observation of the various methods employed by agricultural consultants currently assisting the WFT in farm planning, bodes well.

Plate 7.1.: The eroded riverbank, above which additional orchards are planted

Plate 7.2.: Indicators were developed on both plant (orchards) and animal (cattle) resources

Plate 7.3.: A tractor used for spraying pesticides

One of the important characteristics of the indicators developed by the WFT is that they are *attainable*. They show a strong relation to current concerns on the farm and would, as they stand at present, require little training. Despite the fact that three of the farmers who participated in the field research were illiterate, literacy training and visual methods, akin to Noponen's pictorial diaries (1997), could see the implementation of a participatory monitoring system on the farm in the near future. The indicators are also not complex and are based on the observations of the farmers. It will not be costly to measure as many indicators involve either physical observation or counting. For example, water quality monitoring will involve looking at the colour of water (to assess brackishness), whereas the number of trees which die (due to age or pests) can be counted (Field research, 4 June 1998). Also, the *relevance* of the indicators to the present conditions on the farm has been established as they reflect, down to the level of specific social and technical problems, the concerns of the farmers. Caution must be adopted however in generating indicators which are useful now and which has no relevance in a few years time, when houses have been improved or new trees planted. Although this was discussed with the farmers, the need to evaluate the relevance of the indicators on a regular basis, should be taken further.

Farmers were very clear on how often indicators should be measured, but were less definite on the *time-frame*. This connects in part to the fact that indicators could provide an early warning system. The farmers recognised this as an important objective of indicators and felt that it could assist them in detecting a deterioration in the various components, thus forestalling costly rehabilitation, repair and damage control. They related this particularly to the removal of some of the orchards due to poor soil preparation, thus requiring much-needed but costly orchard preparation procedures prior to planting new trees. As the indicators stand now, most of them could provide a quick picture of a situation, such as housing, the needs of women and training needs. The frequency of monitoring is important, particularly for agricultural activities which are largely regulated by climatic patterns. A seasonal calendar was drawn up to locate the calendar months in which various activities would occur on the farm (Field research, 4 June 1998). This was deemed necessary as the time intervals provided for monitoring many of the indicators were framed in terms of the agricultural calendar. For example, the 'fullness' of beehives (bees play an important role in pollinating fruit trees), has to be checked in July or August, just prior to the trees blooming, whereas the number of farmers without proper clothing

(overalls and machinery) should be counted before harvest time to ensure that the farmers are well-equipped for the strenuous dawn-till-dusk work which the season requires (Field research, 3 June 1998; Field research, 4 June 1998).

The indicators developed by the WFT, 89 in total, are not all good indicators. For example, many of the indicators of the well-being of women and children, identified as a component of the farm, incorporates a range of indicators (electrical appliances, income, playground, crèche, and education and training opportunities), deemed to be signs indicating the well-being of women and children. These indicators were not formulated by the group in which the two female shareholders were represented (Group A) and might indicate the importance of involving women in the development of such indicators. It also serves to highlight the need for an on-farm analysis of the indicators, based on criteria such as relevance, ease of use and measurability. Indicators also need to reflect a balance between accuracy and resonance (MacGillivray and Zadek, 1995 cited in Abbot and Guijt, 1998). The indicators developed by the WFT are essentially grassroots indicators, rooted in the experience and knowledge of the farmers of the WFT. They are therefore not in accordance with criteria, such as scientific measurability. However, the desire by farmers themselves to acquire technical skills, as well as the need to increase the dialogue between farmers, agricultural scientists, researchers and extension officers, all favour the integration of community-based and scientifically-based indicators. An example of this is the indicators developed on water quality in the Philippines, in which indicators of social well-being and science-based water quality monitoring procedures, were implemented (Deutsch *et al.*, 1998). Attempts to integrate indicators into composite or sustainability indicators were also not undertaken. This could form part of the recommendations for the implementation phase and could also be done in the on-farm analysis stage. For example, a range of indicators focusing on agricultural training (water, irrigation) and housing and basic needs (domestic water needs) could be consolidated into one or two composite indicators on the sustainability of water resources on Warmwater.

One of the most important achievements of the indicators developed by the WFT, despite the flaws, is the systems framework which lies at the heart of sustainability (Plate 7.2.). The participatory research framework facilitated this. It also enabled me to be self-reflexive. For example, in the problem analysis exercise (Field research, 26 May 1998), I specifically raised the issues of soil erosion and pesticide use to

ascertain whether these were presenting a problem to the farmers. This reflects my own bias towards emphasising the negative environmental effects of conventional agriculture (Plate 7.3.). I had spoken about my views and conceptualisation of agricultural sustainability, but stressed the fact that it was *their* vision which was of ultimate importance. The lessons to be learnt from Warmwater therefore relate both to the process and the product which emerged from the research. Although far from being ideal, the indicator-based monitoring *process* has presented an opportunity to investigate whether the transformative principles of land reform and agricultural sustainability are being put into practice. The *product* also appears to be of relevance to the farmers of Warmwater.

## 7.2. TRACKING CHANGE: SOCIAL TRANSFORMATION (LAND REFORM) AND AGRICULTURAL SUSTAINABILITY (SUSTAINABLE AGRICULTURE)

Land reform aims to redress the injustices of apartheid by developing a land policy "that contributes to reconciliation, stability, growth and development in an equitable and sustainable way" (DLA, 1997a, 7). The policy also "emphasises the importance of local participation in decisionmaking, gender equity, economic viability, and environmental sustainability in the implementation of the land reform process" (DLA, 1997a, VI). However, recent criticisms directed at both policy formulation and implementation of the land reform programme have questioned the transformative capacity of the land reform programme. In addition, transition to sustainable agriculture in South Africa has been slow. These trends are due largely to structural underpinnings, such as the development discourse, unequal power relations, and the perpetuation of conventional agricultural systems.

The shift in South African development discourse to the macro-economic strategy GEAR (Growth, Employment and Redistribution), promotes land reform predicated on the market-led approach without acknowledging the current budgetary constraints to implementing the programme, thus perpetuating the tension between economic growth and welfarist objectives (Samson, 1997). The establishment of this market-based approach to land redistribution, has been questioned as "markets are never truly free and are bounded by social and political power relations that determine the way in which they are regulated" (Levin and Weiner, 1997, 262). The type of market system proposed in the land reform programme requires that

land be purchased at market value, thereby precluding both the government and the majority of potential land reform beneficiaries from buying land.

Other concerns with the land reform include the lack of administrative and financial capacity to implement land reform and inadequate post-settlement support and land use planning services, have also been expressed. Little functional integration between governmental departments has occurred, while provincial-local tensions, for example between the National Party-led Western Cape provincial legislature and the ANC-controlled national government, further impede the implementation of land reform. The recent dismissal of the chief land claims commissioner, Joe Seremane, apparently due to his criticism of the land restitution process, further indicates tensions within the government (Mbhele, 1998). While Seremane expressed his concern on the land restitution process, which has delivered only nine of the 26 000 claims for land restitution (Mbhele, 1998), the land redistribution sub-programme has also come under attack for its slow pace of delivery. By the "end of 1997, only 0.2% of the total area available for redistribution has been transferred to 16 918 beneficiary households" (Bonti-Akomah, 1998, 19).

The participatory monitoring process initiated on Warmwater, highlighted the need for communities to track the changes in quality of life, biophysical systems and the deeper social transformation trajectories of the land reform programme. If its land and agrarian questions remain unanswered, South Africa runs the risk of making similar mistakes to those of other countries, for example Namibia and Zimbabwe (Munyuki, 1991; Pankhurst, 1995). In addition, land redistribution models need to be broadened to create opportunities for the emergence of a small farmer class. The equity question in the land reform programme could be addressed far more effectively by a range of models, incorporating independent and group production. Nationalisation, expropriation of unutilised, underutilised and indebted land, private transfers, redistribution of state land, and 'land for the tiller' represent some alternatives (Bonti-Akomah, 1998). However, this would require that many existing biases against large vs. small and commercial vs. subsistence agriculture, translated effectively into white vs. black agriculture, be reviewed. Importantly, we need to review the contradictions

> between the interests served by the more actively pursued policies and practices of economic growth and public expenditure, on the one hand, and the welfare of the broad mass of people and long-term sustainability of the biophysical environment, on the other.
>
> (Shanmugaratnam, 1989, 17)

In the next section, I will review the role of the land redistribution model employed on Warmwater, and that of FWES schemes in responding to land and agrarian questions formulated in the Western Cape in particular. I will also address the need to promote sustainable agricultural development in land reform, and to motivate for the confluence between social and environmental justice movements around sustainable agriculture considerations.

### 7.2.1. A role for the farm worker equity share model: The case of the Western Cape

The lack of political will and organisation around land struggles is an important constraint to the land reform programme (Samson, 1997). The local dynamic of the Western Cape province, characterised by an alliance between the National Party and commercial farmers, a farm worker class composed largely of coloureds and a prosperous agricultural sector, compound the perceived lack of political will to implement fundamental rural reforms (See Chapter Five). In terms of land and agrarian reform, South Africa has a history of suppressing the emergence of small-scale agriculture, which has resulted in the virtual absence of a small-scale farmer class, particularly in the Western Cape. The prevalence of FWES schemes in the Western Cape, relative to other provinces, could signify the spread of the partnership-based land reform model. Although the land reform policy envisioned a range of land use models, differing in tenure arrangements and in their geographical spread, FWES schemes have assumed a position of privilege in the Western Cape.

The success and prosperity of agriculture in the Western Cape, hides the fact that the "legal and social condition of slavery left an indelible mark on agricultural labour relations, and still informs many of the social practices on Western Cape farms" (Hamman 1996, 355). Despite the extension of labour legislation to farm workers in 1993, divisions in the labour force, firstly along race and gender lines and secondly along gender-related wage differences, contribute to the configuration of the agricultural labour force of the province. Social development needs, such as

improved nutrition, water and sanitation, housing and educational needs marks the disparity in service provision between the various races and between urban and rural areas, excluding the townships on the Cape Flats. Reid (1996) highlights many of these issues in a synopsis of the issues facing farm workers in the Western Cape province. Despite this and many other recent studies on farm worker issues, many of the practices and relationships on farms in the province exhibit the features of paternalism, where the lives and decision-making capacities of farm workers are severely constrained. Despite this, an increasing trend in unionisation (particularly in the larger export-oriented agricultural regions), the formation of farmers' associations and legislative changes have opened up opportunities for farm workers to voice their objections. du Toit (1996) has stated that the struggle of farm workers can be translated into a struggle to increase the extent and depth of the state into white farmlands. Political transformation provides opportunities for farm workers to challenge white supremacy in the farmlands, understand themselves and their rights better (du Toit, 1996). It has also provided opportunities, although limited, for land reform.

South Africa's land reform programme exhibits a strong poverty focus "aimed at achieving a better quality of life for the most disadvantaged" (DLA, 1997a, 7). The target group of FWES schemes does not appear to constitute the most disadvantaged, which in the Western Cape are seasonal farm workers and informal settlement dwellers. However, the farmers of the WFT were found to be occupying houses of poor quality and lacking water and sanitation facilities. There was therefore little in their current socio-economic position to indicate that they were in an advantageous position, aside from job security and a source of income derived from their employment on Warmwater. Not many of the benefits of FWES schemes, such as a secure income after retirement, increases in efficiency and productivity have been observed on Warmwater. A participatory monitoring system could therefore monitor both the transformative effects of the FWES model, as well as the implementation of environmental sustainability in the conventional-oriented deciduous fruit industry. What has the findings of participatory monitoring process initiated on Warmwater, revealed thus far?

The large-scale settlement approach favoured in FWES schemes, typified in the Warmwater case study, decreases the likelihood of the creation of a smallholder class in the province. According to de Klerk (1996), the dearth of projects of New

Farmers in the Western Cape could be due to this large scale settlement approach, which requires considerable financial assistance. Not only would large-scale approaches disadvantage farm workers, whose equity could diminish with increased private investment (as in the case of Warmwater), but it could also limit the opportunity for farm worker empowerment. In addition, the employment-generating capacity of FWES schemes is limited and will not increase rural livelihood opportunities in the province. Private sector partnership-based equity schemes do not create a large number of additional livelihoods, nor do they target the rural poor. Nevertheless, land and labour policies, including the FWES scheme model, have created a framework in which the basic relationships of paternalist power can be challenged (du Toit, 1996). It is within this framework that a participatory monitoring system could be implemented. Despite focusing on a relatively privileged class, permanent farm workers, FWES schemes do represent a land reform option which should take its place among a range of other land reform models. Whether other models are receiving sufficient support is another question.

One of the leaders of a group of farm workers who have been trying to access land for deciduous fruit production in the Western Cape since 1994, relayed the difficulties they had experienced in transferring state land onto their name (Interviews, 1997). After securing the commitment of the national government, provincial government officials in the Western Cape denied them the go-ahead, despite countless attempts at re-working their business plan. Despite the group's willingness to start small, the large-scale approach, requiring costly irrigation inputs, was favoured by the provincial authorities. Thus, four years later, this group is no nearer to transferring the land onto their name. So, FWES schemes appear to have become *the* model in the province, thus impeding the development of a small-scale farmer class. Where land reform policies have been put into practice, participatory research, focusing on local-level decisionmaking processes and structures, is required to respond to the needs of beneficiaries. Participatory research would ensure that land reform is taken from the echelons of bureaucracy and academia to the intended beneficiaries of land reform policies and programmes.

Participatory monitoring could thus play an important role in assessing the social transformative effects of land reform in general, and FWES schemes in particular. Interviews and discussions with various stakeholders on the WFT revealed a commitment to empowerment, capacity building and an increased quality of life for

the farmers. Tensions between Nuwe Begin and New Farmers, which have their basis in unsatisfactory decisionmaking processes, such as pressure to make quick decisions, hinder the process towards capacity building and empowerment on the WFT. In view of the context described above, the farmers, many of whom were farm workers on farms in the Western Cape, have experienced the heavy hand of farmers and farm managers all their lives. A complete dependence on white farm owners for their income, housing and other social needs have left many farm workers unable to adapt, in a short space of time, to accepting a great deal of responsibility for decisionmaking. Other concerns rested on the need for legal documents to be in Afrikaans, rather than English and the need for increased interaction between the members of Nuwe Begin and New Farmers. Relations between New Farmers' project manager and the farmers were very good, but the farmers, especially the women did not feel that a true 'partnership' was being developed. A document, dealing with the concerns of the farmers of the WFT raised during shareholder meetings, indicates the need for empowerment to be seen as a process, rather than a product which emerges because of legislative changes (Gaugler, 1997). The document states that the drive for success exists among the farmers, but it needs

> to be kindled...filtered...and transformed into a force, where their individual spirits come together in a team that creates a win-win situation for all beneficiaries. Real change requires intense effort and the commitment of all over a long period. The process is never complete.
>
> (Gaugler, 1997, 2)

The approach adopted by New Farmers is reminiscent of the relations existing on commercial farms, and therefore in contrast to land reform objectives of re-dressing the injustices of apartheid. It is therefore important that New Farmers understand the need to institute bottom-up, all-inclusive decisionmaking processes on the WFT. This could assist in addressing the dichotomy which exists between farmers' roles as shareholders in Nuwe Begin (and therefore in the WFT), as well as employees of the WFT. Farmers presented an understanding of the establishment of the WFT and the role of Nuwe Begin therein, but they were still dissatisfied with decisions taken by the elected management team. It is therefore important that the farmers internalise the implications of the farm's success to their well-being, particularly the fact that decisions which appear to undermine their short-term needs could ensure the long term success of the farm. In terms of transforming quality of life, the farmers have seen very little being done to improve the poor housing, lack of sanitation and availability of warm water. Thus, basic needs, such as these, featured prominently in

the indicator identification exercises (Field research, 4 June 1998). This was especially important as they had enjoyed a superior quality housing on Killarney, where the majority of farmers had resided prior to moving to Warmwater. Although the farmers identified a suite of indicators to monitor quality of life issues, factors such as the level of participation and empowerment, were not easily measured, despite being raised by farmers as important issues. This should be concretised in the monitoring process, as farmers were definitely aware of the need for empowerment, which strikes at the heart of the power dynamics on South African farms. Moreover, some farmers are increasingly losing their confidence in Warmwater, as illustrated by the recent comment of one of the farmers.

> Nuwe Begin maak nie meer vir my sin nie en dit maak ook nie meer saak nie. Ons kan nie met mekaar oor die weg kom nie. Ek het gedink ons gaan die wêreld aan die praat kry.[8]
>
> (Field research, 24 August 1998)

FWES schemes provide an important source of capacity building. Subject to a number of recommendations, FWES schemes do have the potential to create sustainable livelihood opportunities for land reform beneficiaries. Recommendations for the implementation of FWES schemes, gleaned from the WFT and secondary literature, centre on enhancing the transformative abilities of this model. This would include an increased focus on the criteria outlined for land redistribution projects "in order to improve [the] income and quality of life" (DLA, 1997a, 38) of land reform beneficiaries. Capacity building of beneficiaries is important, especially as the equity schemes are put forward as partnerships which incorporate land reform objectives, such as empowerment. Under the auspices of its grants and services component, DLA makes provision for a training and capacity building grant which could "encourage people to become actively involved in the land reform process and to equip both grant applicants and service deliverers to participate more effectively" (DLA, 1997a, 43). In the case of the WFT, the farmers identified the need for training with the express purpose of increasing their knowledge of agricultural production, and thereby their ability to participate more fully in farm management (Field research, 3 June 1998). This could be achieved by accessing the training and capacity grant outlined above. A second recommendation for the implementation of the FWES land reform model centres on improving the relationship of trust between partners. The existence of trust and good labour relations are stated as one of the

[8] Nuwe Begin does not make sense to me and it doesn't matter anymore. We can't get along with one another. I thought we were going to get the world talking.

pre-requisites for the success of FWES schemes (Grimm, 1998). The WFT project was initiated between partners who had not known or worked with one another in the farm context. Though the farm manager was well-known to and trusted by the farmers, their relationship with New Farmers had only been established when Nuwe Begin approached New Farmers for assistance in 1995. Thus, in this instance, additional efforts, such as spending time with the farmers and sharing their concerns and visions, would be required. Extreme caution should be adopted in replicating the neo-paternalist or participative managerial systems, based purely on achieving efficiency or productivity.

Thirdly, it is recommended that economic viability objectives should not dominate other objectives. This could result in land reform initiatives with a very high price tag, geared at "production for profit, rather than simply enhanced food security" (de Wet, 1997, 361). The danger of this is that household food security could be compromised, while export-oriented production, particularly in high-value production activities such as the horticulture sub-sector, continues. A holistic approach to land reform stresses the fact that in addition to agricultural productivity and economic viability, the quality of life of project beneficiaries needs to be improved. Equity schemes need to consider a range of institutional and tenurial arrangements to ensure that the large-scale, group farming approach does not dominate. One source alludes to this as 'forced collectivisation', which was accompanied by many negative consequences, such as limiting local farmers' decisionmaking capacity in the countries where such systems were instituted (Blaikie and Brookfield, 1991b). Individual production, engendering the development of a small-farmer class could also be entered into, as the sugar outgrower schemes in KwaZulu Natal illustrate (McKenzie, 1996).

A final recommendation for implementation of the FWES model is that, in addition to social justice and economic viability, it prioritises issues of agricultural sustainability. To this end, agricultural sub-sectors, such as fruit or forestry, which has conducted research into sustainable farming practices, are at an advantage (Erskine, 1991; Rencken, 1997). Sustainable livelihoods-based research, undertaken in other agricultural sectors, such as range management (Cousins, 1996) and aquaculture (Mohamed and Dodson, 1998), could also be considered.

In sum, the Warmwater farmers' participation in the FWES scheme has resulted in a

substantial shift in thinking. This is encapsulated in the comment by one farmer that though he had been a 'boy'[9] when he was working for a white farmer, and despite the fact that he still had to work hard, at least he was his own 'boy' now. Land reform has therefore provided the framework in which farm workers could reclaim their human dignity, their sense of self and their search for a better future for themselves and their families. However, the 'new' experience of coping with poor social infrastructure, increased responsibility, interacting with a range of professional people (lawyers, scientists, bankers) and poor crops, requires that the farmers be given some leeway in adjusting to their new roles. The participatory monitoring process could assist by enabling the farmers to exercise greater 'control' over their concerns, through constantly checking the status of a range of factors. Secondly, it provides an opportunity for capacity building through learning about the various components. A third benefit is the active involvement of local people in securing a more sustainable future. Thus it provides a way to ensure that land reform goals of interactive participation, capacity building and empowerment are not waylaid. Participatory monitoring could also create a space for the introduction of more sustainable agricultural practices.

### 7.2.2. Warmwater Farming Trust: Lessons for the implementation of sustainable agriculture?

Land reform is as much about rights, such as access to land, as it is about the use of land. Agricultural sustainability should therefore constitute a key characteristic of any land policy. Despite a lack of capacity at a number of levels (financial, administrative, institutional), the lack of a functional integration between the Departments of Agriculture and Land Affairs, has been a serious impediment to the implementation of land reform. Land reform beneficiaries are often faced with the reality of being given access to land with no after-care or appropriate extension services. Cross aptly sums this up when she says that "livelihoods and production planning until very recently has come a distant second to considerations of justice" (Cross, 1998, 103). Research linking land reform with sustainable agriculture is therefore required to ensure that land reform beneficiaries are given the opportunity to engage in economically viable and environmentally sustainable commercial and small-scale farming. Currently, the choices are just not being presented to beneficiary communities. NGOs dealing with the land question are also

[9] A term used to denote the child-like position of the farm worker in relation to the (white) farm owner or master.

beginning to address the importance of natural resource management (National Land Committee, 1996), to ensure that a land reform programme premised on principles of local participation in sustainable land development, is realised. Participatory monitoring, an example of popular participation, could provide land reform beneficiaries engaged in agricultural production with an opportunity and tool to assess their progress towards land and agrarian reform. It could also assist them in tracking change, in relation to social transformation, as well as the sustainable livelihood creation potential of the land reform programme.

Although I felt that the field research contributed to simplifying the concept of sustainable agriculture - through the amount of time spent with the farmers sustainable agriculture had become less wordy and foreign. Nevertheless, there was still the need for further discussion on particular farming methods. Sustainability was adopted by the group as an important goal, but there seemed to be little questioning of the negative effects of many practices on the farm, such as the use of pesticides and fertiliser and the need to find alternatives for these inputs. Nor did the farmers question the type of agriculture which they were practising, which has a profound effect on society and nature. Sustainability was presented as the 'health' of the political, economic, ecological and social components of the farm. More specifically, conceptions of sustainable agriculture focused on environmental and social justice, and the creation of a farming system other than that the farmers, former farm workers, were accustomed to. Inter-generational equity and the well-being of future generations (seen in the legacy farmers wished to leave their children), were deemed as very important by the group. However, the sustainability of commercial agriculture itself was not questioned. Rather, this concern reflects my own philosophical position and not the perceptions of farmers. I had spoken about the negative effects of some agricultural practices on the environment (pollution, loss in biodiversity, soil erosion) and society (loss of employment opportunities through mechanisation), but was very hesitant to impart my own views too forcefully. I shared my concerns with the farmers during our discussions and explained that although the field research dealt primarily with identifying indicators of sustainability, one of the underlying aims was to popularise the concept of sustainable agriculture. It was therefore envisioned that the indicators would begin to impress this concept on the farmers, in time resulting in the search for sustainable solutions to their problems. To this end, I will include examples of sustainable agriculture methods, particularly those employed in the deciduous fruit farming

sector, in the final report to be submitted to the WFT (Mohamed, forthcoming).

The lack of practical examples of sustainable agriculture in the Western Cape exacerbates the difficulty in moving from sustainability as a concept to sustainable agriculture in practice. Though indicators are a starting point, a deeper understanding and commitment to change, especially in the high-risk commercial agricultural sector, is often achieved easier once it can be illustrated in a practical manner. Caution must be exercised in advocating an input-substitution approach which would detract from the implementation of a sustainable agriculture which addresses ecological, social, political and economic forces. The ethos of the sustainable agriculture movement, far from being inefficient, proposes abandoning the "battle against nature into the art of encouraging nature to release the most benefits for human use with the least possible effort [and destruction]" (Rodale, 1983, 18). In order to effect a change, policies and practices aimed at sustainable agricultural development need to evolve along with participatory monitoring systems. On-farm research could also lead to the development of farming practices in tune with the principles of sustainability.

The indicator-based system developed by the WFT has a number of benefits which include popularising the concept of sustainability and enhancing the role of farmers in monitoring change and initiating action. Another benefit is the holistic framework adopted in the research which allowed many of the key components of sustainable agriculture to be incorporated in the identification of indicators. Despite the limited impact of the monitoring process on the implementation of sustainable agricultural practices thus far, it must be noted that the WFT have yet to implement the participatory monitoring system. Thus, an on-farm analysis of the indicators, coupled to the implementation of the participatory monitoring system could bring questions about agricultural sustainability to the fore. Change stemming from the transformation of the values influencing agricultural land use decisions, could be more effective than 'superficial' adjustments, such as the adoption of IPM. However, Vanclay (1992) has outlined a number of barriers in the adoption process, which can be applied to the adoption of sustainable agriculture as well. These include the degree of complexity of agricultural technologies, economic benefits, high capital and intellectual outlay costs ('steep learning curve') and a lack of appropriate physical and social infrastructure. Thus, instead of adopting a patronising attitude towards non-adoption of sustainable agricultural practices, one must try to

understand that farmers' failure to adopt new methods are often based on trade-offs, for example many farmers would not adopt a method which requires high capital outlay costs. Notwithstanding that 'new' methods could reduce long-term expenditure on pesticides or fertilisers for example, farmers would still trade-off these positive long-term benefits to environmental and human health against short-term needs to service their debts. The challenge is therefore to distribute the weight, centred largely on economic considerations, more evenly to prioritise environmental and social well-being. This could contribute to the creation of more environmentally and socially just farming systems.

> The development of a "sustainable agriculture" that maintains the current conditions of agricultural property and production rather than guaranteeing conditions of production for everyone would not likely result in social, economic, and environmental equity. The basic premises and ideology of sustainability discourse have to be transformed into ones that replace greed with societal altruism, poverty with the commitment to meeting the needs of the population, and ignorance with knowledge through an enhanced educational system.
>
> (Perfecto, 1995, 177)

The sustainable livelihood creation capacity of the WFT rests on the ability of the project to "secure access to adequate stocks and flows of food and cash to meet basic needs...where security is defined in terms of ownership of (or access to) resources and income-earning activities, embracing the need for assets and reserves to offset risks" (Chambers, 1988, 1). In this context, sustainable livelihood creation will require a commitment to all the needs of the farmers. Many of their fundamental basic needs have not been met, few of the farmers have managed to acquire assets to offset risks (especially health-related risks) and impending investment by New Farmers changes the premise that Nuwe Begin would be the sole or majority owner of the WFT in the near future. Agricultural sustainability, though no longer a foreign concept or goal, is largely in tune with the vision of the WFT. Much still needs to be done to transform this concern from the adoption of economic and environmental efficient methods, such as IPM, to the point at which sustainable "agriculture...[is] a central part of community economic and social activities, with sustainability becoming an emergent property of whole communities, catchments and landscapes" (Pretty, 1997, 12). Thus, participatory monitoring has a role to play in ensuring that progress towards sustainable livelihoods creation occurs on the WFT.

What then of the potential of land reform to create sustainable livelihoods, premised on notions of social and environmental justice, and linked to the transformative ideals of the land reform programme? Chapter Three described the myths of a successful modern agriculture, which hides social costs, such as decreased quality of life, income disparities, and the safety and health of farm workers; as well as environmental and economic costs (Perfecto, 1995). Drawing on the successful transition to large-scale sustainable agricultural development in Cuba, Perfecto provides important lessons which incorporate the re-construction of rural communities, the adoption of a range of agricultural land use models, and the promotion of interaction between farmers, farm workers and researchers to facilitate a sustainable agriculture which results in fundamental change (Perfecto, 1995). The initiation of IPM on Warmwater and the farm's involvement in an initiative to remove banned pesticides from farms in South Africa (Appendix A), signifies the beginnings of a more sustainable agriculture. However, technological changes do not, on their own, advance the philosophy of agriculture - fundamental social change could.

While South Africa's road to sustainable agriculture includes the promotion of interaction between farm workers, farmers and researchers in the proposed landcare programme (Landcare South Africa, 1997), not much has been done to construct alternative land use models or to initiate fundamental rural reforms. Land and Agriculture Minister, Derek Hanekom, says that sustainable agriculture in South Africa will be achieved through the introduction of a landcare programme which will concentrate on improving land use, introducing labour-intensive projects to rehabilitate destroyed land, preventing further destruction of land and creating an awareness of the new land reforms (*Land*, 1998). However, one must ensure that such grassroots action is not subsumed into the prevailing neo-liberal development discourse. To allow this to happen will greatly diminish the transformative effect of local action. Thus, social movements, such as the peasant movements in Mexico and Brazil (Rodwell, 1998; Dieltiens, 1998) or the environmental movements centred on livelihood concerns (e.g. Brazilian rubber tappers), should be nurtured. At the same time, mass-based environmental education, focused on exposing the myths of modern agriculture, is required to delineate the need for changed agrarian economies. Hence, the burgeoning environmental justice movement has a key role to play in 'greening' South Africa's land reform programme.

### 7.2.3. Linking social and environmental justice: the road still beckoning

Alternative development discourses, such as sustainable agriculture, have little chance of succeeding within the present global political economy that needs to undergo fundamental restructuring. Exploitative economic and political systems, espoused as neo-liberalism or the "free market" ideology, are far from being free. Instead, they are embedded within the dominant development discourse. Thus, change needs to move beyond the transformation of institutions, as stated by Sklair (1994), to incorporate broader restructuring of ethics, values and beliefs (Auerbach, 1993; Harremoës, 1996). Social movements, such as the environmental or sustainable agriculture movements, could begin to play a role in formulating alternative environment-development imaginaries.

The recent rise in the environmental justice movement which merges "environmental, social equality and civil-rights movements into one potential political force" (Cutter, 1994, 113), provides an impetus for locally-driven change. Of concern to the environmental justice movement has been the political economy of inquiry: what is researched and why? The demands for certainty, the need for science to stand up to criticism, and the potential role of communities in researching and understanding environmental and social problems, without diminishing the importance of professional researchers, are also important (Bryant, 1995a). Policies and solutions for environmental justice should therefore look at the social structure in which wealth is accumulated, i.e. the structural components of poverty and racism; policy developments; and the need to develop a new identity grounded in respect for nature and one another (Bryant, 1995a). The environmental justice movement which has emerged in South Africa, produces a newsletter, the *Environmental Justice Networker*, which focuses on a range of environmental justice issues (Environmental Justice Networking Forum, 1998a). It shows promise in facilitating the development of a mass-based environmental movement (Khan, 1990a). For example, the presentation by various communities at the recently convened Poverty, Inequality and Environment hearings, reflect the growth of the environmental justice movement in South Africa - one which is long overdue. To quote Archbishop Njonkulu Ndungane

> The protection and preservation of the natural environment has to become a priority to save the poor from becoming poorer. I hope we pay heed to the serious issues facing us in our country and world during the hearings on poverty in our country, because when injustice prevails the consequences affect both people and the environment. Environmental justice is integral to peace and prosperity.
>
> (EJNF, 1998b, i)

Another overriding theme in the environmental justice movement has been its emphasis on the need for grassroots organisations to undertake political action to effect change, and to increase the co-operation between communities and scientists through participatory research (Bryant, 1995b). However, this does not imply that the quest for scientific certainty, which the movement criticises, will be achieved. Rather, it builds "a working milieu where trust and mutual respect can be fostered and where everyone can give their best effort in finding meaningful and agreeable solutions" (Bryant, 1995b, 212). The participatory monitoring process, initiated with the farmers of the Warmwater Farming Trust, was intended to lay the foundation for closer links between an environmental and social justice-oriented research community and land reform beneficiaries. However,

> To use the resources and capabilities of community people in the problem-solving process, and thus enhance their co-operation, assumptions about their lack of "smartness" need to be challenged; they must be perceived as smart, concerned, caring, serious enough about being engaged in the problem-solving process, and able to follow through on responsibilities.
>
> (Bryant, 1995a, 13)

From the findings of the field research, it is my contention that the "smartness" exists for involving farmers in monitoring change and in formulating a vision for sustainable livelihoods. What concerns me however is the structural underpinnings which constrain the development of such grassroots action. The perpetuation of hegemonic neo-liberal trends in the development discourse have filtered through to the land and agriculture policy development and implementation processes in South Africa (Murray, 1994; Samson, 1997). To assume that a market-based land redistribution programme will succeed, or that the entrenchment of the property clause in the Constitution will not inhibit land restitution, is naive. Above all, it indicates the faith placed in incentives and market liberalisation to achieve land and agrarian change. Restoring the humanity or 'sense of self' to farm workers living in conditions of paternalism on farms for generations, fostering the development of a rural civil society, and transposing environmental justice considerations into land and agrarian reform, are not prioritised. While the voices for land use planning,

sustainable livelihoods planning and community-based environmental monitoring has increased (Cooper *et al.*, 1996; Marcus *et al.*, 1996; Cross, 1998), little has been done to envision alternative futures. Perhaps, as Sklair (1994) and Johnston (1996) contend, the current political-economic system predicates against such action.

The environmental justice movement presents one avenue in which to challenge the current political-economic system by linking social justice (land reform) concerns with considerations of nature (sustainable agriculture). South Africa's land reform programme is in danger of becoming a clawless paper tiger, with little impact on the social or agricultural transformation of the South African agrarian economy. While fundamental change requires concerted action by environmental activists to link into agrarian concerns, whether around pesticide use or water conservation, critical insights on the formulation and implementation of policies, should not be sacrificed. For example, in the Western Cape, enormous scope exists for such linkages between environmental justice workers, pesticide researchers, and political activists, i.e. environmental justice - health - social transformation. However, this linkage should be seen within the political and economic context of the province which includes the importance ascribed to commercial agriculture, alliances between commercial farmers and politicians, and a lack of land reform opportunities. Environmental justice proponents should therefore bear into consideration the influence of structural underpinnings, operating at various levels, on the ultimate impact of local action.

South Africa's land reform programme faces a number of important challenges at the structural level. Such obstacles, which include limited administrative and financial capacities of government, hegemonic global development discourses, and inadequate land use planning, appear to constrain the implementation of a sustainable agriculture-based land reform programme. Nevertheless, lessons from the participatory monitoring system initiated on the WFT, point to the exigency for new approaches to land reform.

## 7.3. PARTICIPATORY MONITORING: LESSONS FOR THE IMPLEMENTATION OF THE LAND REFORM PROGRAMME

> There is a severe risk of increased environmental degradation if preventative and improved resource management measures do not accompany the land reform programme...By actively participating in the planning process, both the applicants and officials will learn what options are practicable and possible. The assessment of environmental sustainability should not be the prerogative of officials alone.
>
> (DLA, 1997a, 23, 26).

The development of the land reform programme in South Africa has many of the ingredients for enabling sustainable agricultural development. Principles of the policy include social justice, participation, accountability and democratic decisionmaking. It also requires that projects developed at the local level be economically viable and environmentally sustainable (DLA, 1997a). Thus, the principles of land reform respond well to the multi-dimensional nature of sustainability. A key point to note is that the caution adopted by the government, based on the need to avoid replicating apartheid's social engineering (Lipton, Merle, 1996), has resulted in a land reform process facing many problems, at the policy and implementation levels (See Chapter Two). For example, the lack of capacity and functional integration, both inter-departmental as well as between national and provincial departments, further hinders the implementation of land reform objectives. Budgetary cuts compound implementation procedures further (Samson, 1997). Neither its market-oriented approach, nor the symbolically important land restitution cases resolved thus far, have seen the widespread extension of the land reform programme to its intended beneficiaries.

Private sector initiatives, such as FWES schemes, implemented under the auspices of the land redistribution arm of the land reform programme, have lessened the burden on the state to provide institutional capacity. For example, the current planning procedure on Warmwater which deals with the planting of new orchards, has employed a team of consultants to conduct agricultural investigations and assist in farm planning. Unfortunately, it is more reminiscent of top-down decisionmaking than the participatory planning processes promoted in the land reform programme. One of the dangers of such an approach is that FWES schemes could be exempted from the principles which should inform land redistribution projects, such as an adherence to economic and social viability and environmental sustainability. FWES schemes, according to the land policy, "must pass the acid test, namely that they

significantly improve the security of tenure of the farm worker, contribute to land redistribution, reconciliation and harmony" (DLA, 1997a, 48). The reliance on outside expertise will not only prove to be costly, but could limit the involvement of land reform beneficiaries in planning processes. Despite differences with the rest of the country, such as the absence of labour tenancy and the presence of a smallholder class, the

> ...South African countryside as a whole, outside the African reserves, became what it had long been in the Cape, namely a land not of plantations, not of smallholders, but of large owner-operated farms worked by a harshly exploited black labour force.
>
> (Ross, 1986, 58)

The lessons drawn from the WFT could therefore provide important insights for the reconstruction of the land reform programme in South Africa. Added to the structural constraints outlined in Chapter Two, the environmental concerns around land reform are also very complex. The land-conservation interface involved the removal of "people from the land in the name of conservation", a skewed distribution of natural resources, the formulation of the homelands policy, enforced conservation measures, enclosing the majority of South Africans in limited land space (Cooper *et al.*, 1996, 589-590). In addition, the negative environmental effects, associated with both commercial and small-scale (subsistence-oriented) agriculture indicate the need to implement re-generative land use practices within land reform (Wilson, 1991; van Zyl *et al.*, 1996). To this end, a participatory research framework, incorporating farming systems research and extension (FSR&E) and PRA, has been put suggested by one of the leading proponents and practitioners of sustainable agriculture in South Africa (Auerbach, 1995).

Recommendations, based on the research undertaken with the WFT and gleaned from the literature sources on land and agrarian reform in South Africa, have been formulated to develop new land reform models. The field research in particular, sought to investigate the viability of promoting sustainable agriculture through an indicator-based participatory monitoring process. Although the institutional arrangements of the WFT are more akin to those of the FWES models, the field research conducted with the farmers could be applied in the land reform programme in general. Due to the lack of support services and institutional capacity to implement the land reform programme, community-based natural resource management strategies, such as the participatory monitoring process require further

investigation. In the words of Auerbach, the

> chaotic complexities of human and biological systems require the development of new research methodologies if research is to contribute to solving the social problems of our rural areas.
>
> (Auerbach, 1995, 6)

Many researchers have commented on the need for participatory research within the land reform programme. This would ensure that the calls for grassroots participation in the policy documents of the government, is accompanied by change on the ground (Wynberg, 1995; Cooper *et al.*, 1996; du Toit, 1996; Marcus *et al.*, 1996; Levin and Weiner, 1997). In addition, the value of participatory research methods in understanding and transforming poverty has been manifested in recent South African studies (Binns *et al.*, 1997; May, 1998). While full cognisance has been taken of the drawbacks of PRA, it has been put forward as an approach which could lead to the "empowerment of the people, whilst promoting rural development and establishing a basis for the sustainable use of available human and natural resources" (Binns *et al.*, 1997, 3). Similarly, the *Poverty and Inequality Report* included submissions from the *South African Participatory Poverty Assessment* study, which mainly utilised PRA (May, 1998). Calls for increased functional integration of the national Land and provincial Agriculture departments, particularly in relation to the provision of land use planning and post-settlement support services, are slow in being answered. On the other hand, the focus on increased capacity, both at the local government and community level, has been expressed in a number of policy development processes, for example land reform, rural development strategies and local government restructuring (DLA, 1997a, Rural Development Task Team and Department of Land Affairs, 1997, Ministry for Provincial Affairs and Constitutional Development, 1998). Thus,

> The long-term success and sustainability of the land reform programme is to a large extent dependent on the ability of potential beneficiaries to be able to access the programme easily, and to have a clear understanding of what assistance they can get from government. The commitment to decentralised delivery in the long term is founded on a belief that this is the only way to ensure effective participation in the programme.
>
> (DLA, 1997a, 101)

Participatory monitoring, implemented at the community level, has the potential to inform policy development and to contribute towards enhanced capacity at the community level. The participatory research framework, incorporating research

methods such as FSR&E, PRA and sustainability indicators, could therefore ensure that the implementation of a sustainable agriculture-based land reform programme incorporates beneficiaries in planning, implementation and monitoring processes. Figure 7.1. illustrates one possible way to implement such a process. The cyclical and iterative procedure involved in arriving at decisions on land use, financial management and the implementation of specific farming practices, needs to be grounded in participatory research processes. In order to avoid the "danger that the link between the realities on the ground and the research process will not be made effectively", Auerbach recommended that FSR&E and PRA research methods be utilised in ensuring sustainable agricultural development (Auerbach, 1995, 6). This could be applied to the land reform process, where sustainable land use is imperative for the success of the programme. The identification and assessment procedures for suitable land in the land reform programme, needs to be accompanied by a process of land use planning which should involve scope for on-going monitoring. Moreover, such a process should be steeped in the involvement of land reform beneficiaries and the various stakeholders, such as agricultural extension officers and local government officials, to ensure that the administrative obstacles to the implementation of the land reform programme are overcome.

The strategy outlined in Figure 7.1. is basically a skeletal outline of a participatory research-driven process. Though it loosely represents a conventional project cycle, underlying notions of community involvement is a central premise. Both the identification of suitable land for production purposes, as well as land use planning exercises, should be conducted with the land reform beneficiaries. In addition, agricultural expertise from the public and private sectors should be drawn upon to ensure that sound agro-ecological decisions are taken. This support base should be preserved throughout the project implementation stage as well as in the day-to-day operation of the agricultural enterprise. The participatory monitoring process sets this project cycle apart from others. In addition to enhancing local-level capacity to track change, it could also be linked to local economic develop processes, such as Integrated Develop Plans, landcare initiatives and the monitoring and evaluation of land reform projects. Thus, it will assist both the beneficiaries as well as a range of actors at the local, provincial and national level. An evaluation process differs from monitoring in that it is not done on a periodic basis, and is usually a one-off activity. On-farm evaluation should be conducted in tandem with external evaluation.

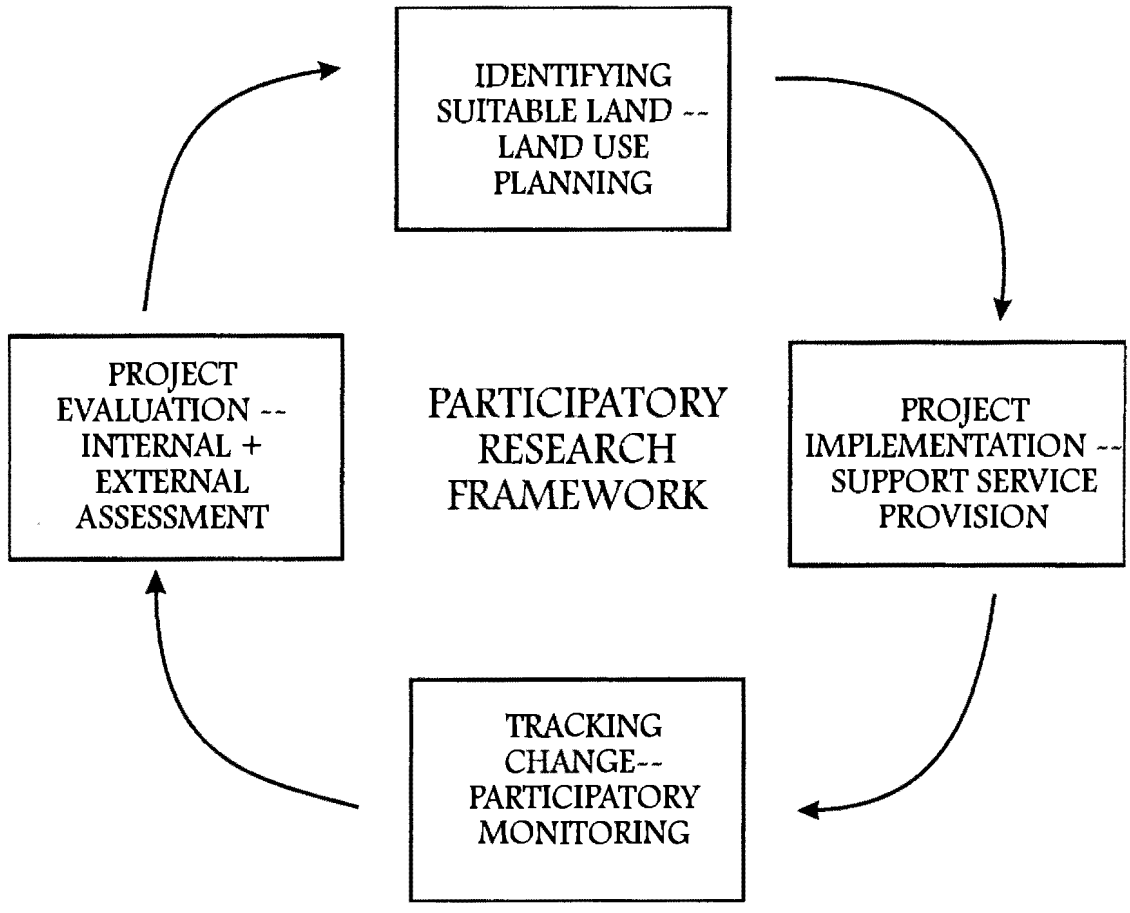


Figure 7.1: A strategy for achieving sustainable agriculture-based land reform

The process outlined above is largely geared towards implementation by land reform beneficiaries engaged in a range of land use models, for example FWES schemes, small-scale independent production or peri-urban agriculture. The financial or administrative costs involved in instituting such a process are probably key obstacles to its implementation. An enabling policy environment, processes aimed at building organisational and individual capacity (local, provincial and national) and a favourable financial environment could facilitate the creation of such a process. This view has been echoed by numerous authors, who affirm the need for policies, processes and institutions to complement the land reform programme (Cross, 1998; May, 1998). Thus FWES schemes, the landcare programme of the Department of Agriculture and the range of policy processes around poverty reduction, local economic development and sustainable agriculture, could all contribute to the implementation of a sustainable land reform programme.

> A comprehensive restructuring of the apartheid landscape will require a broad, popular, and participatory rural land reform programme that is locally based but nationally and regionally articulated by a committed democratic state.
>
> (Levin and Weiner, 1997, 4)

The WFT has provided an illustration of the way in which policy objectives, such as community empowerment and sustainable land use could be transformed into community-based processes which enhance local capacity to deal with change. A great deal still needs to be done to enable the "application and integration of information from participatory monitoring into a participatory development process" (Abbot and Guijt, 1998, 75), thereby ensuring that monitoring does not become an end in itself. It is through such a process (Figure 7.1.) that a sustainable land reform programme could be developed which has "the potential to restructure profoundly the agrarian economy of South Africa, and thereby, to change existing patterns of inequality in rural areas (May, 1998, 241).

For the farmers of Warmwater, an uncertain future lies ahead. They find themselves at a critical period. Two years have passed since they first came to Warmwater with the hopes of a better life, a different life to that of the majority of farm workers in the Western Cape. Though some of their hopes have been realised, many remain unfulfilled. To them, policy formulations and the dominance of the neo-liberal development discourse, come a distant second to their concerns of living on the land, meeting their basic needs, and ensuring their security. A participatory research-based land reform programme, embodied in the participatory monitoring process, provides an inroad into the creation of sustainable livelihoods premised on social change and agricultural sustainability.

# - CHAPTER EIGHT -

# LAND AND LIFE:
## HEALING THE SOUTH AFRICAN (LAND)SCAPE

This thesis set out to investigate the viability of instituting participatory monitoring for sustainable agriculture within the context of land reform in South Africa. Land and life in my thesis, one of the key themes of human-environment relations, involved developing a tool (participatory monitoring) for tracking the transformative capacity of the land and agrarian reform processes in South Africa. Moreover, it entailed placing land and agrarian reform within both the South African and broader socio-economic and political structural contexts. This was achieved by adopting a political ecology approach to understanding land reform (Chapter Two). The history of land dispossession, the main land and agrarian questions, and the strengths and weaknesses of the land reform programme in South Africa were considered. Thereafter, sustainable agriculture, as an alternative to conventional, chemically-oriented agriculture, was investigated to formulate a case for the confluence between land and agrarian reform, premised on the principles of sustainable agriculture (See Chapter Three). Developments in both land reform and sustainable agriculture indicated the increased importance attached to community-based initiatives, such as participatory monitoring.

The Warmwater Farming Trust (WFT), a land reform project in the Montagu district, established in 1996 as a partnership between former farm workers (Nuwe Begin) and an agricultural development company (New Farmers Development Company), typified developments in post-apartheid land reform in the Western Cape province (outlined in Chapter Five). The long-standing history of white commercial agriculture, the proletarianisation of agricultural labour, the lack of a black and coloured smallholder class, and the economic importance of agricultural production, contribute to the dearth of land reform opportunities in the Western Cape. Warmwater, constituted as a farm worker equity share (FWES) scheme, involves former farm workers as the primary land reform beneficiaries. Warmwater is also a deciduous fruit farm, operated on a conventional basis, similar to that of other commercial farms in the province. This case study thereby provided tremendous challenges for the promotion and implementation of sustainable agriculture-based land reform. Despite the criticisms of the FWES land reform

model, such as its incapacity to reach a wide spectrum of beneficiaries, it has gained favour in the Western Cape and thus required further investigation. Field research with the farmers of Warmwater, employing participatory research methods, was aimed developing an indicator-based participatory monitoring system that would assist the farmers in tracking change, related to land and life.

Farming systems research and extension, participatory rural appraisal (PRA) and sustainability indicators were the primary methodological tools utilised in the field research on Warmwater. The political ecology analytical framework underpinning these methods emphasised the need to move beyond the realm of academia to engage meaningfully in processes of social transformation, such as land reform. The principles underscoring these methodologies also included a focus on researcher participation, and the inculcation of a 'new professionalism' which incorporates learning from and respecting the knowledge of those being researched (Chambers, 1991). The participatory research employed in my thesis had less to do with extractive and more with interactive participation. Farmer participation was thus a common thread tying the field research together. While farming systems research provided the whole-farm, holistic framework required for the field research, PRA and sustainability indicators were employed as tools to identify indicators of sustainability, incorporating biophysical and social components, such as natural resources (water, soil, trees) and housing.

Three full workshops and several informal discussions were held with the members of Nuwe Begin, while interviews were held with other key stakeholders from Nuwe Begin and New Farmers (See Appendix A). The history of Warmwater, a problem analysis exercise, and a holistic framework of the farm were developed in the first workshop which laid the foundation for the identification of indicators, an exercise completed at the second workshop. The field research was of significance to the farmers - it provided them with an opportunity to discuss issues of concern and develop a system which could assist them in monitoring progress towards social change - it also provided important insights into the viability of participatory monitoring in general.

The participatory monitoring process initiated on Warmwater provided important lessons for the role of local-level action in land and agrarian reform. Evaluated in terms of a set of criteria, drawn up by Abbot and Guijt (1998), the 89 indicators developed by the farmers, are essentially good indicators. They are relevant, simple

to administer, and attainable. Although the indicators exhibit certain weaknesses by ignoring substantive issues such as the distribution of power on the farm, they respond well to the purpose for which they were created, i.e. to monitor social transformation and agricultural sustainability. Despite the interest which farmers showed in exploring biophysical components by accessing agricultural education opportunities, scientific measurability was not a criterion for evaluating the indicators. Motivations made by farmers in this regard has since provided a rationale for recommending the development of scientifically measurable indicators, thereby strengthening the links between farmers and scientists. Other lessons learnt from Warmwater include the holistic analytical framework adopted by the farmers and the priority afforded to socio-economic well-being alongside biophysical considerations. Notwithstanding the importance of these lessons, the viability of participatory monitoring for a sustainable agriculture-based land reform must be located within the broader landscape of power at the provincial, national and global level.

The South African land reform programme faces a number of penetrating challenges, both at the policy formulation and implementation level. On the policy level, the ideological bent of the land policy, advocating a market-based land redistribution programme, is indicative of World Bank influences. The neo-liberal approach, witnessed in the development discourse of South Africa (from basic needs to economic growth), pervades land and agriculture policies. Implementation of the land reform sub-programmes, restitution, tenure security and redistribution, have also occurred at a slow pace owing to limited administrative capacity, a lack of financial resources, and inadequate livelihoods planning and post-settlement support services for land reform beneficiaries. A number of researchers have also asserted the need for a conflux between land reform and sustainable agriculture (Cooper *et al.*, 1996; Marcus *et al.*, 1996). The dearth of sustainable agricultural practices, the economic importance and dominance of (white) commercial agriculture, and the prevailing negative perception of sustainable agriculture in South Africa (Urquhart, 1997), mitigate against such a conflux. The promotion of a landcare initiative (Landcare South Africa, 1997) is not capable of addressing the pressing need for agrarian transformation on its own. Fundamental change, incorporating action at a number of levels, is required. In my view, a confluence between environmental and social justice, new models of land reform, and an incorporation of beneficiary participation, provides mechanisms with which to

institute fundamental social change. However, it should be noted that such

> Reforms cannot come about without concomitant changes in the constellation of social and political forces at the global and national levels. This is a long, slow and cumulative process. The mobilisation of local communities and other groups around conflicts over the environment...have an important role to play in this process.
>
> (Ghai, 1994, 10)

From its onset, land reform should embody an on-farm participatory research framework. Denied access to own land, forcibly removed from land, and enduring insecure tenure, many previously marginalised groups are now applying to the land reform programme in the hope of being given an opportunity to acquire land for agricultural production. The apartheid-era was a painful experience for many individuals and communities, participatory research provides a mechanism to incorporate land reform beneficiaries in land use planning, support service provision, participatory monitoring, and project evaluation. Farmers needs are therefore placed centre-stage. An added benefit of this research framework is its appropriation of alternative thinking, such as sustainable agriculture and environmental justice. It therefore provides an opportunity for the creation of sustainable farming systems at the local level, by-passing the obstacles which exist for the implementation of alternatives to conventional agriculture in South Africa. These include divergent and contradictory views of sustainable agriculture, the perpetuation and predominance of the ideology of conventional agriculture, and the lack of a coherent policy on sustainable agriculture (Urquhart, 1997). New models of land reform should therefore be developed to provide a trajectory for the 'greening' of land reform. A participatory, sustainable agriculture-based approach to land reform should move beyond input substitution to encapsulate the ideals of social and environmental justice. To this end, a political ecology approach which "involves encouraging grassroots actors to develop alternative environmental management practices premised on socially just and sustainable livelihoods" (Bryant, 1997, 16), has been adopted in my thesis.

In conclusion, the land and life questions of South Africa presents the challenge of understanding the effects of institutionalised racism on South Africa's society-nature interactions, and to engage *with* communities in the formulation of alternative visions. The need to undertake research in the rural realm, to unlock the voices of those being 'developed', and to strengthen the 'weapons of the weak', present

challenges to geographers attempting to bridge the gaps between research - praxis - policy - social change. It also affords an opportunity to develop an ecological critique of modernity which moves beyond theoretical arguments and apolitical populism, to incorporating action geared to effecting changes to unequal power relations, rooted in the local and global economy. Thus geographers, adopting a political ecology analytical framework, could confront the full complexity of human-environment relationships and release the emancipatory potential of critical and pro-active academic enquiry of benefit to communities in their search for land and life.

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Interviews, 1997. These interviews, held with 22 interviewees composed of researchers, government officials and community groups, are listed chronologically below. The name of the contact person, date/s of contact, organisational affiliation and mode of communication is provided.

| | | | |
|---|---|---|---|
| Breen, C | 5/12/96 | Institute for Natural Resources | E-mail |
| Lebert, T | 23/1/97 | Farmworkers Research and Resource Project | Fax ; E-mail |
| Turner, S | 7/2/97<br>13/2/97 | Programme for Land and Agrarian Studies | Meetings |
| Hulbert, S | 27/1/97 | Surplus People Project | Meeting |
| Davison, E | 18/2/97<br>4/3/97<br>3/4/97 | Commission on the Restitution of Land Rights, Department of Land Affairs | Meetings |
| Middleton, S | 18/2/97 | Department of Land Affairs | Meeting |
| du Toit, A | 27/2/07 | Programme for Land and Agrarian Studies | Meeting |
| Wynberg, R | 28/2/97 | Environmental Evaluation Unit | Meeting |
| Sidego, P | 10/3/97 | LANOK | Telephone |

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|---|---|---|---|
| Phillips, T | 20/3/97 | Land Development Unit | Meeting |
| Cowling, R | 7/4/97 | Botany Department, University of Cape Town | Meeting |
| de Klerk, M | 10/4/97 | Economics Department, University of Cape Town | Meeting |
| September, E | 15/4/97 | Western Cape Small Farmers Association | Meeting |
| Isaacs, J | 16/4/97 | INFRUITEC, Department of Agriculture | Meeting |
| Catling, D | 25/4/97 | Agricultural Consultant | Meeting |
| Ivey, P | 22/5/97 | National Water Conservation Campaign, Department of Water Affairs and Forestry | Meeting |
| Armstrong, G | May 1997 | Centre for Sustainable Agriculture | Meeting |
| Versveld, D | 5/6/97 | Forestek, CSIR | Meeting |
| Jephtas, E | 5/6/97 | Fynbos Unit, Elsenburg, Department of Agriculture | Meeting |
| Brakman, P | 20/6/97 | Directorate: Resource Conservation, Department of Agriculture | Meeting |
| van der Merwe, M | 13/7/97 | Atlantis Small Farmers Association | Telephone |
| Ruiters, M | 27/9/97<br>23/10/97<br>12/11/97<br>22/11/97 | Klipfontein farm, Villiersdorp | Meetings |

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# APPENDIX A

## RESEARCH SCHEDULE EMPLOYED ON THE WARMWATER FARMING TRUST

Contact with the Warmwater Farming Trust (WFT) was made through my co-supervisor, Mohammad Karaan who was acting as an advisor to Nuwe Begin, participants in a farm worker equity share scheme in the Montagu district. He had mentioned my research to the farm management who displayed an interest in participating in the field research component. Formal contact with the WFT was made in February 1998 and my first meeting with the farmers was on 16 March 1998. This formed the first of several informal and formal interactions between myself and the farmers. Meetings were held on a regular, usually monthly basis and I attended as often as I could. This gave me an opportunity to not only gain a deeper understanding of the social relations and key issues on the farm, but to also familiarise myself with the bio-physical environment. The farm is approximately two and a half hours from Cape Town, and thus it was not possible to attend all the meetings on the farm. Meetings were however, complemented with semi-structured interviews with various role players on the farm, including the farm trustees. This provided important background information to the farm, cited in Chapter Six.

Meetings were held on-farm and I attended meetings facilitated by Mohammad Karaan or one of the members of the management team. Discussions encompassed a range of issues, such as the grievances and concerns of the farmers. My research essentially formed part of the agenda for these meetings and I usually made short presentations to the farmers. In total, I attended four of the meetings of the WFT. These were held on:

- 16 March 1998
- 24 March 1998
- 15 April 1998
- 10 August 1998

In addition, semi-structured interviews were conducted with the trustees of the WFT, which incorporated members of Nuwe Begin, as well as New Farmers Development Company. A meeting was also conducted with an agricultural consultant who assisted New Farmers and Nuwe Begin in the land reform process. The interviewees were:

- Chris Crossley, Project Manager, New Farmers Development Company: 6 May 1998; 23 June 1998

- Sighardt Gaugler, Trustee, WFT: 24 March 1998; 3 May 1998

- Danie Hofmeyer, Agricultural consultant: 3 July 1998

Three full workshop sessions were held with the farmers, in which the body of the field research was conducted. In this regard, I was assisted by Wendy Engel, an agricultural student from the University of Stellenbosch. This entailed living on the farm for a period of approximately two weeks. The workshops were held on:

- 25 – 27 May 1998: Problem analysis and the identification of the primary components of Warmwater

- 3 – 5 June 1998: Identification of indicators and the role of indicators in promoting sustainable agriculture

- 24 August 1998: Identifying a way forward

A great deal of informal discussion accompanied the workshops. For example, the research schedule which entailed that research be conducted in the mornings, precluded the involvement of the women on Warmwater. The only two female shareholders residing on Warmwater were present at the workshops, while the rest of the women joined the third workshop on the 24th August. As the women were employed on a neighbouring farm during the period of the first two workshops, interviews were conducted with approximately 50% of the women at a time which was convenient to them. Living on the farm greatly facilitated this.

Preceding the third workshop, I completed a report, summarising the findings of the field research for the farmers in Afrikaans. This report was discussed at the workshop on the 24th August 1998, and feedback and proposals for implementing a participatory monitoring process on the farm, was discussed. A final report, summarising the main recommendations of my thesis will be presented to the farmers in January 1999.

Interviews, a series of informal meetings and discussions with 22 interviewees, incorporating government officials, development workers and community members on land reform and agricultural issues in South Africa, were held assess current perceptions on a range of issues (See Primary References). These interviews were conducted in order to define my research focus and to gain a sense of the current context of agricultural and land reform issues in the Western Cape. Communication occurred through personal meetings as well as e-mail or telephone. Meetings were very informal and assisted in fine-tuning research questions and understanding agricultural development issues. Interviewees had either completed research or were working on agricultural and/or land issues and were thus aware of the main issues.

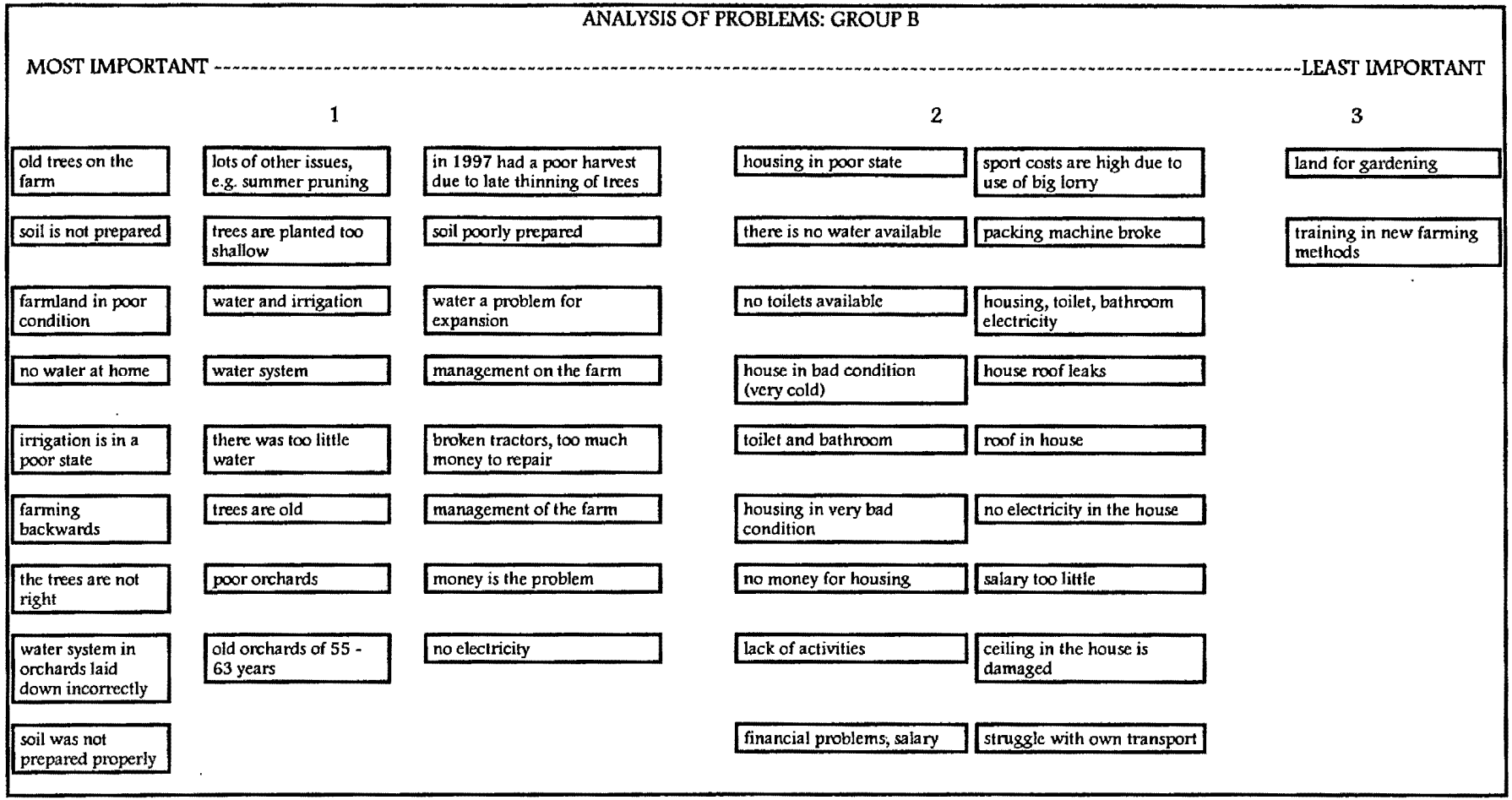
# APPENDIX B: PROBLEM ANALYSIS CONDUCTED WITH THE WARMWATER FARMING TRUST

ANALYSIS OF PROBLEMS: GROUP A

MOST IMPORTANT ----------LEAST IMPORTANT

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| housing is poor, e.g. roofs are leaking and walls crumbling | too little water | trees are not planted deep enough and trees can't grow | needle-work courses needed so that women can work throughout the year | transport costs are high due to use of big lorry | clinic |
| live far (crossing river difficult | water problem - too little for harvest | bad planning of trees | training for women | packing machine broke | life insurance and pension |
| housing is poor | | old trees need to be replaced with new orchards | post-harvest work for women | buckets break too quickly | playground for children |
| toilet problem | | trees are old and branches break under the weight of fruit | more people must be receive administrative training | could not work with all the fruit as drying racks of poor quality | crèche and playground |
| no water at house | | low income on farm | plan activities for winter, e.g. winter fruits (citrus) | | training for a crèche |
| house is falling in | | right cultivars must be planted | | | crèche |
| | | shortage of money | | | playground for children |
| | | tree problems, e.g. old trees | | | |
| | | income on farm very little | | | |
| | | bad harvest & salary low | | | |

Analysis of problems conducted with members of the Warmwater Farming Trust (26 May 1998)




Analysis of problems conducted with members of the Warmwater Farming Trust (26 May 1998)