policies that work
for sustainable agriculture and regenerating rural economies

The view from South Africa

James Carnegie,
David Cooper
and Penny Urquhart

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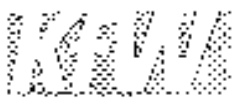
A country case study report for:
Policies that Work for Sustainable Agriculture and Regenerating Rural Economies

DFID



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Policies that work for sustainable agriculture and regenerating rural economies series

There are enough examples world-wide to suggest that agriculture which is pro-sustainability and pro-people is working. We now understand the concept of 'sustainable' agriculture is not confined within the farm boundary, but has strong links (and a potential to be a dynamic force within) a wider rural economy. So, 'sustainable agriculture' not only contributes to greater agricultural production, but also environmental regeneration and local economic development.

IIED's Sustainable Agriculture and Rural Livelihoods Programme has undertaken collaborative research to look at 'Policies that work for sustainable agriculture and regenerating rural economies'. The overall objective of this research is to understand the policy contexts and instruments that can promote sustainable agriculture and social change. This has been done in high, medium and low income countries in both the South and the North. 'Success stories' have been identified and the policy environment that has permitted these to emerge has been investigated. Are there lessons we can learn from these 'islands of sustainability' that will help us turn islands into continents?

This paper is one of a series of reports from the Policies that Work project, which give the research and methodological background and country specific findings. *The views and opinions reflected in this material do not necessarily reflect those of IIED, it's partners or the project donors.*

Acronyms and Abbreviations

ANC	African National Congress
ARC	Agricultural Research Council
CBO	Community Based Organisation
CCD	Convention to Combat Desertification
CPA	Communal Property Association
CPF	Community Projects Fund
CPFSP	Community Projects Fund Support Programme
CSA	Centre for Sustainable Agriculture
CSIR	Centre for Scientific and Industrial Research
DARC	Directorate of Agricultural Resource Conservation (within National Department of Agriculture)
DEAT	Department of Environmental Affairs and Tourism
DFA	Development Facilitation Act
DLA	Department of Land Affairs
DWAF	Department of Water Affairs and Forestry
EIA	Environmental Impact Assessment
ESTA	Extension of the Security of Tenure Act
EU	European Union
FAO	Food and Agriculture Organisation of the United Nations
FS	Free State province
FSDoA	Free State Department of Agriculture
FSR-E	Farming Systems Research and Extension
GEAR	Growth, Employment and Redistribution
GMO(s)	Genetically Modified Organisms
ha	Hectare
HRM	Holistic Resource Management
ICM	Integrated Catchment Management
IUCN	International Union for the Conservation of Nature
IDRC	International Development Research Centre (Canadian)
IIED	International Institute for Environment and Development
IPM	Integrated Pest Management

KFT	Kutlwanong Farmers' Trust
Km	Kilometre
LDO	Land Development Objectives
MEC	Member of the Executive Council – i.e. a member of a Provincial cabinet
NAFU	National African Farmers' Union
NAMC	National Agricultural Marketing Council
NBI	National Botanical Institute
NCMP	Ntshongweni Catchment Management Programme
NDA	National Department of Agriculture
NEMA	National Environmental Management Act, 1998
NFAP	National Forestry Action Plan
NGO	Non-governmental organisation
PRA	Participatory Rural Appraisal
PTW	Policies That Work study
RAO	Rural Animation Officer
RDP	Reconstruction and Development Programme
SA	South Africa
SAAU	South African Agricultural Union
SADC	Southern African Development Community
SASEX	South African Sugar Experiment Station
SAFCOL	South African Forestry Company
SANSOR	South African Seed Producers Organisation
SARL	Sustainable Agriculturally-based Rural Livelihood
SDI	Spatial Development Initiative
SMMEs	Small, medium and micro enterprises
THC	delta-9-tetrahydrocannabinol
WWF-SA	World Wildlife Fund of South Africa

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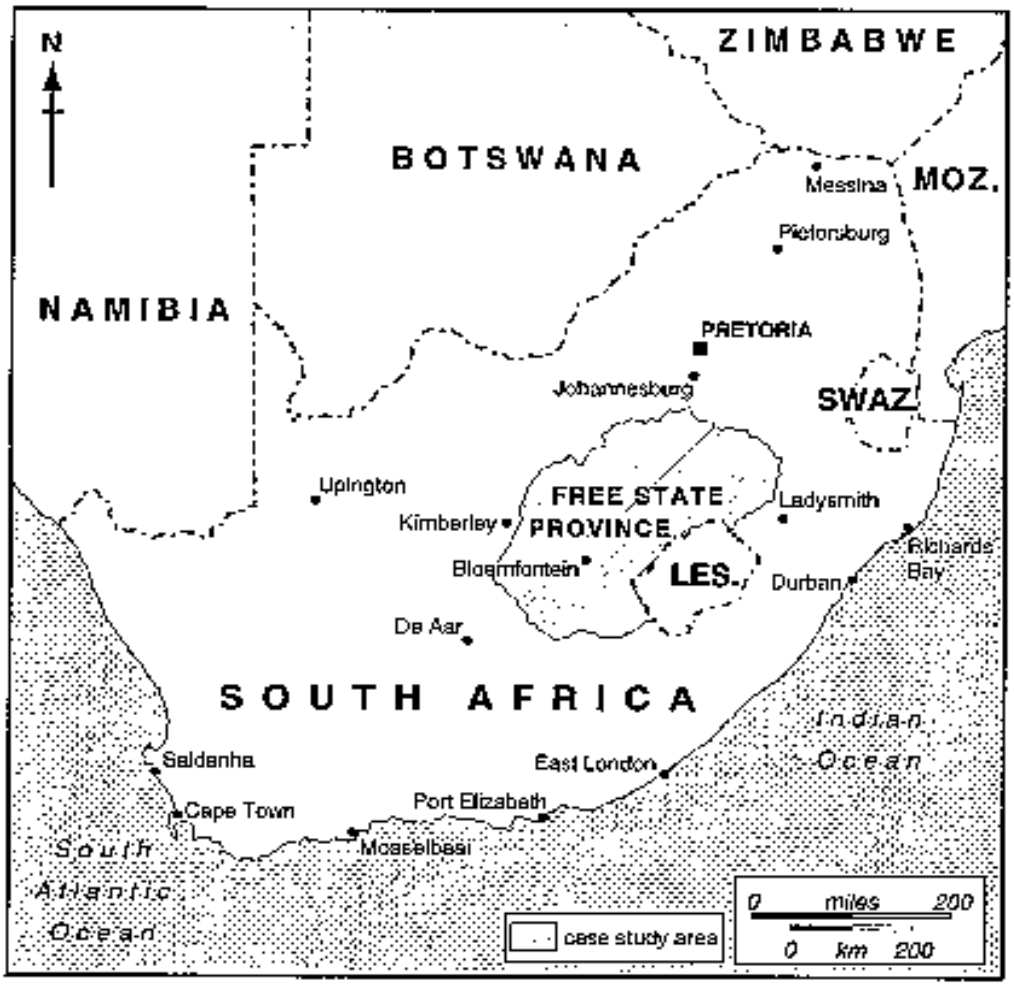
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Study overview

1.1 The PTW research

An initial workshop held in London in October 1996 launched the Policies That Work (PTW) for Sustainable Agriculture and Regenerating Rural Economies programme of the International Institute for Environment and Development (IIED). Since then, team members from diverse organisations in ten different countries have carried out research towards building profiles for policies and policy processes that support sustainable agricultural practices and sound rural livelihoods. This report synthesises the findings of the PTW research activities in South Africa.

The broad approach of the international PTW research programme was to identify 'islands of success' and trace them back to their policy causes (effect-cause), towards building up a policy profile and developing policy alternatives for Sustainable Agriculturally-based Rural Livelihoods (SARLs).

The PTW project is concerned with understanding the policy contexts, both agricultural and non-agricultural, and policy instruments that can promote sustainable agriculture and social change. Particular processes of policy-making and relationships among key stakeholders necessary for formulation and sustained implementation of effective policies are a further focus area.

1.2 Approach to the South African case study

The broad approach of the international PTW research programme was adapted for the South African socio-political and agricultural context, particularly in recognition of the following contextual elements:

- As South African agriculture has been dominated by the large-scale commercial sector, it is difficult to identify islands of success for SARLs.

- The imperative for implementation and change since the early 1990s has resulted in a dynamic policy environment, and, arguably, necessitated top-down policy making. These factors hinder both effect-cause and cause-effect approaches to research, as a number of policies have only been implemented for a couple of years, while new policies of relevance for SARLs are still emerging.

- Widespread institutional restructuring of implementing agencies, while desirable, introduces further complexity into the policy arena.

These points suggested a focus for the South African project on stakeholder perspectives of SARLs and on widening the policy debate through discussion of policy alternatives, rather than development of a detailed policy profile. An additional focus of the project was on exploring elements of institutions that may support or constrain SARLs, as key factors in the translation of policy rhetoric into action. The South African case study has focussed on the Free State Province for the detailed stakeholder analysis, farmer perceptions and detailed case studies. The Free State province is by no means representative of rural South Africa, and is fairly unique in the dominance of large-scale, high input, extensive commercial agriculture. However, the Province was chosen more for the speed at which it was able to introduce new policies and transform public sector institutions immediately following the first democratic elections in 1994. The national survey included a range of case studies in order to bring in a more national perspective. Further details of the case study context, including that of the Free State, are provided below.

1.3 The research team

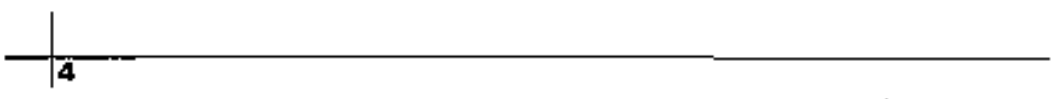
The PTW Research Team for the South African case study consisted of the following people:

- Provincial: James Carnegie (team leader), Moscow Marumo, and Ian Goldman (Khanya-managing rural change cc); and Mathilda Roos (Green Zebra cc); all from the Free State;

- National: Penny Urquhart, independent environmental policy consultant

- International: Dr Joanne Abbot and Simon Croxton, the project co-ordinator, both based in London at the International Institute of Environment and Development (IIED).

A wide range of resource persons contributed directly to, and enriched the study, including Mncedisi Madolo (Former Free State Department of Agriculture, now with National African Farmers' Union), Challa Moahloli (FS Dept of Agriculture), Cas Human (MEC for Agriculture in the Free State); David Cooper (Special Advisor to the National Minister of Agriculture and Land Affairs); Izak Groenewald of the Centre for Sustainable Agriculture based at the University of the Free State and Saliem Fakir (Head: SA IUCN), among others.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Context

2.1 The South African context

South Africa has a high Gini coefficient[1], second only to Brazil in the world. This has arisen as a result of South Africa's history of unequal access to resources, entrenched into the economy and spatial patterns through the processes of colonisation and apartheid.

Since 1990, South Africa has been through a period of rapid change, which has included a redefinition of many of the policies that shape the structure of the society. In some cases, policies are drawn up, but implementation has barely begun. In other areas, policy implementation has proceeded quite rapidly. New policy direction, before South Africa's first democratic elections in 1994, was defined in the RDP or Reconstruction and Development Programme (ANC, 1994), which set optimistic targets in many areas, few of which have been achieved in the first five years of government. For example, the RDP document claimed that 30% of farmland would be targeted for redistribution, while to date only 1% of land has actually been transferred.

Much of the challenge lies with highly unrealistic targets that were set in the RDP. These failed to take into account the lengthy but necessary process of restructuring and reorientation of government institutions required, the reality of resource constraints, resistance of the established bureaucracy in some cases, and also represented political promises made prior to elections that could never realistically be achieved. This means that implementation of new policies will take longer than initially envisaged. For instance, land reform is more likely to be a 20-year or longer programme, and visible results have only started to be seen in the last year.

1 An aggregate numerical measure of income inequality ranging from zero (perfect equality) to one (perfect inequality) (Gillis *et al*, 1996).

South Africa's population now officially stands at close to 43 million, with four million South Africans unemployed, or roughly 38% of the potential active labour population (Electronic Mail and Guardian, 29 October 1998). The job crisis in South Africa has been developing since the beginning of apartheid, through policies such as job reservation, inferior schooling, migrant working patterns and forced removals to 13% of the land. Results of the 1996 census show that South Africa is still radically divided along racial lines, with 73% of black people working in unskilled or artisan positions while nearly 50% of whites have management jobs (Electronic Mail and Guardian, 21 October 1998).

Within the currently stagnant South African economy (with growth estimated at 0.7% for 1998), agriculture contributes about 4.5% to the annual GDP, but plays a stronger indirect role through backward and forward linkages to other sectors. In 1997, agriculture contributed some 10% of the country's total exports, or about R10 billion (Ministry for Agriculture and Land Affairs, 1998), up from about 8% before 1994.

The agricultural sector is responsible for the employment of some 700,000 people, or about 7% of the country's workforce. Including seasonal and contract employment, this figure is estimated at about 1 million farm workers (Ministry for Agriculture and Land Affairs, 1998). Agricultural employment is down by some 30% over the last 10 years. It may be partly due to different methods of counting in the last census (carried out in 1996, with results released in September 1999)[2], but the downward trend in employment levels seems firmly established.

This figure does not include the following:

- Those that are 'self-employed' in smallholdings, especially in the former homelands, where up to 500,000 families may be involved in agriculture. This ranges from small-scale farming, such as cultivation of a small plot, to the 17% of families (85,000) who own substantial irrigable farms or large herds of livestock.
- About 40,000 (mostly white) plot owners (between one and ten hectare lots near towns and cities) who may practise some part-time agriculture.

2 Statistics SA 1999.

With an average annual rainfall of only 497mm, South Africa is mostly semi-arid. Rainfall is highly variable in geographic terms, with rainfall generally declining from the eastern seaboard to the arid west of the country. In physical and biological terms, the country is regarded as having limited natural agricultural resources (NDA, 1996). Only 3 per cent of South Africa's 120 million ha of land is high-potential agricultural land, and 86 per cent of this is under crops. In dry years, the contribution of livestock increases. Less than 1.5 million ha of land can be irrigated, with 1.2 million ha already under irrigation (IDRC, 1995). But these limited resources contain a wonderful diversity, with bio-climates ranging from desert to sub-tropical, and with the potential nationally to produce a wide variety of crop, animal and horticultural products. South African agriculture produces 95% of all the national food and raw materials for agro-processing (such as cotton, wool, tobacco, fruit for juicing, sugar) and is the third largest export sector in the country.

Of the 80% of agricultural produce produced by 20% of farmers, some 95% is produced by individually owned or private companies, so the extent of agribusiness control in primary agriculture is very low. In the supply and marketing sectors there is more concentration, but the largest player is the co-operatives, which again are farmer owned, and so constitute a different form of agribusiness. Major areas that are agribusiness-controlled are thus farm machinery, pesticides and some seed.

2.2 Natural resource management

Natural resources constitute both a component of the capital assets of rural people, as well as an important and often unpredictable determinant of their vulnerability context. Natural resources, like other capital assets, also provide people with the capability to be and to act. The past predominance of the high-input, intensive mono-cropping agricultural system in South Africa has resulted in a number of environmental problems, which have not only caused ecological degradation but also reduced future land use options, in some cases in a permanent manner. This section explores some of these natural

resources issues which have significant consequences for sustainable rural livelihoods. Although natural resources are discussed as a separate section here, there are clearly inseparable links between social and political matters, choice of technology and the orientation and nature of agricultural support services, and the state of natural resources.

Although most agricultural land is already used for this purpose in the country, there is some potential for intensification, as well as better utilisation of some resources in the former homelands. In South Africa, the availability of soil moisture is a critical factor determining suitability of land, which is directly dependent on rainfall, often characterised as the most variable climatic factor in South Africa (National Department of Agriculture, 1995). At the same time the high input-output production system, combined with misallocation of resources, has caused severe degradation and worrying soil loss, siltation and other environmental problems. Latest estimates are that more than 300 million tons of topsoil are washed away every year. South African soils are fragile and highly susceptible to erosion, particularly if inappropriate cultivation and irrigation techniques are used. The links between political and natural spheres are clear from the fact that apartheid's social engineering is a causative factor in the extent of soil erosion in the former homelands – as Cooper (1991:183) notes, "Overcrowding is undoubtedly the major cause of soil erosion in South Africa".

Other environmental problems include desertification, encroachment of urban development into prime agricultural areas, degradation through overgrazing, salinisation and waterlogging arising from incorrect irrigation methods, pollution from excessive use of pesticides and fertilisers, and inappropriate cultivation of marginal land (National Department of Agriculture, 1995; Yeld, 1997). Rural bio-diversity is threatened by the spread of exotic and invasive plant species, the increasing use of land for forestry and the destruction of indigenous forests for agriculture. There are also fears that new varieties produced by hybridisation and genetic modification may threaten indigenous species cultivated over generations by indigenous farmers. The White Paper on Biodiversity (DEAT, 1997) identifies the agricultural sector as a causative factor in habitat loss and fragmentation; over-exploitation of

species (through over-grazing and over-harvesting of wild species such as flowers); air, water and soil pollution; and the introduction of harmful alien species.

Degradation is worst in some former homeland areas, where high rainfall and erodable soils combine with high human and livestock populations to cause massive soil losses, which are some 50 times that experienced from commercial agriculture, which itself suffers from unacceptable loss of topsoil. A recent rapid appraisal study on land degradation in the country concluded that at least 25% of South Africa's total land area is "severely degraded", and proportionately more of this is in the homelands (NBI, 1998).

It is not felt that climate is a prime factor for desertification in South Africa. As Tim Hoffman, leader of the NBI study notes: "Here the problem is mainly human factors, and the fact that the most degraded land is found in the former homelands suggests that state policies are to blame" (Electronic Mail and Guardian, 19 June 1998). Major culprits are forced overcrowding in the homelands, betterment schemes[3] and the migrant labour system.

There is environmental damage in rural areas arising from pollution of surface and groundwater by industries, power stations and mines. In some areas of the country there are serious health problems from uncontrolled and unrehabilitated asbestos mines.

A recent study has focused on identifying new approaches based on appropriate technologies for soil and water conservation (Department of Water Affairs and Forestry, 1998). These approaches range from those employed in small community-based projects, to those of large, national government-driven programmes like Working for Water. They include alien plant removal, catchment management projects (see Box 10), rehabilitation, desalination, indigenous technologies and minimum

3 These programmes were designed to address soil erosion caused by overcrowding in the former homelands, through measures such as enforced stock reduction and drawing scattered populations into closer settlements. Betterment depended on the concept of 'economic units', which ultimately served to reinforce inequalities in communities. Betterment programmes were fiercely disliked by communities, their merits debatable, and their negative effects in terms of social disruption considerable (Cooper, 1991).

tillage (Box 19). Similarly, initiatives to create conservancies represent a drive towards integrated land management that is relatively widely practised. In part, it combines different land uses with commercial farming and encourages the return of natural fauna and flora. However, coupled with positive approaches such as these, are worrying institutional constraints. Resource protection in most provinces has virtually come to a standstill during a period of policy revision. In Gauteng province for example, resource conservation has been focussed on removing invasive species. Subsidies to individual farmers have been withdrawn, while in resource-poor areas the budget no longer exists to maintain or improve conservation works. The LandCare programme launched by national government will pilot resource conservation in two catchments as part of an exercise to redirect future policy and expenditure.

This brief section has provided an outline to major natural resource management issues and problems, and pointed towards some innovative and positive approaches for their sustainable utilisation. Further comments on natural resource management issues are made throughout this report. See in particular section 4 which outlines recent policy and institutional developments, and sections 6 and 7. Moving from a picture of the national context with respect to natural resource management, this report now describes the context of the Free State Province, the case study area for the PTW research.

2.3 The Free State Province

The Free State is located in the centre of South Africa and extends over an area of 129,480 square km. The Free State conjures up images of rolling landscapes and vast, extensive farming areas; while there is no doubt that the province remains South Africa's agricultural powerhouse, its rural population is declining in numbers. Already almost 70% of the people of the Free State are living in urban settlements (FS Provincial Government & MXA, 1998). At the same time as this change in its rural nature, the staple extractive industries of the Free State Goldfields are shrinking. This places emphasis on creating more and sustainable livelihoods in rural areas. The province incorporates the two former

homelands of QwaQwa in the East, and Thaba'Nchu in the centre. These are both small homelands comprising 2% of the total land area, but are home to 22% of the population, with a population density of 238 people/km compared to a provincial average of 22 people/km (FS Provincial Government & MXA, 1998).

The Free State's estimated population is 2.47 million (1996 Census preliminary population estimates), which makes it the province with the second smallest population after the Northern Cape. The estimated growth rate of 1.7% *per annum* and the population density are the second lowest among the provinces. The ethnic division[4] of the population is estimated as follows: Blacks 84%, Whites 13.5%, Coloured 2.5% and Indian 0.0004%.

Two thirds of the province's people live in poverty (World Bank, 1995), giving the Free State the third highest poverty rate in South Africa. QwaQwa has the highest rates of poverty in the province where the estimated figures are at 88%. Rural poverty in particular is difficult to quantify, but estimates indicate that 75% of the poor live in rural areas (FS Provincial Government & MXA, 1998).

Extreme inequity exists in the distribution of income, with people in rural areas poorer than their urban counterparts. Other than the people living on large-scale commercial farms, rural people rely mainly on remittances and state social grants for income. With increasing unemployment, families, especially female-headed households, people in rural areas, the disabled, the youth and others who have special needs, have become increasingly vulnerable, and because they have no security and sustainable livelihoods, they turn to the social welfare system for income, maintenance and social support.

The economic activity of the Free State depends to a large extent on the performance of mining, manufacturing, trade and agriculture. The

4 Under apartheid, people were divided along ethnic and racial lines into four groups: Blacks – people of African descent; Whites – people of European descent; Indians – people of Indian descent (who were prohibited by law to live in the Free State under apartheid), and Coloureds – people of mixed racial descent, living largely in the former Cape Province. Racial groups were treated differently under apartheid resulting in the inequalities of today.

Province's overall contribution to the national GDP is about 6.4%. Until 1988, the province's economic activity was mainly concentrated in agriculture and mining, but is now more diversified as the contribution from manufacturing, trade and the service sectors has increased. However the contribution of previously disadvantaged communities to the provincial economy is still very limited.

Free State commercial agricultural production contributed 14,7% of the total agricultural sector in SA, and has reported increased export earnings since 1993 (FS Provincial Government & MXA, 1998). The main crops grown are maize, wheat, sorghum and potatoes. Despite its impressive share in the national agricultural economy, the agriculture sector remains highly dualistic: the large-scale sector comprising about 9,500 white commercial farmers, controls 98.2% of the land and accounts for nearly all the marketed output. Of the 12.9 million ha land in the Free State, 90% is farmland. Of this, 4.2 million ha are potentially arable and 8 million ha are grazing land. According to the Agricultural Census (1988) this is 89% of the surface area of the province and includes virtually all of the more productive agricultural land. The remaining 11% of the land includes urban, conservation and the former homeland areas where agriculture is of a more subsistence nature.

Although agriculture is a major employer, accounting for 14% of the labour force, access to agricultural resources (land, water & services) remains inequitable. Small-scale farmers produce mainly for subsistence with the exception of a few cases of small and medium sized farms owned by emerging farmers and some peri-urban producers. There is potential for expansion, but particular problems exist in developing this sector due to various factors discussed in this paper.

While actual figures may vary, the agricultural context both nationally and for the Free State province is one of sharp division into the two classes of commercial, mostly large-scale agriculture, and the small-scale farmers largely concentrated in the former Black homelands. The racially-based inequalities with respect to access to land and resources are similarly apparent nationally and in the Free State.

2.4 Conceptual framework and methodology

Key assumptions and definitions

The PTW research programme activities have been underpinned by a number of key assumptions:

- Sustainable agriculture and regenerated rural economics are considered to be desirable and necessary for the move to sustainable rural livelihoods.
- Agricultural systems are not sustainable if they do not have strong, dynamic links with the wider rural economy.
- For sustainable rural livelihoods, both large-scale farming operations and smallholder agriculture should work towards sustainable agriculture.
- Inclusion of multiple stakeholder perspectives into policy, including farmers and those normally excluded from the policy processes, should be promoted.
- Agricultural systems are wider than production systems, and have to take account of the impact of agriculture and other aspects of the rural economy on the natural and social environment.

'Policy' as it is used in this study refers mainly to public policy. However, where indicated, policy of private sector institutions and civil society groupings has also been explored. The understanding of sustainable livelihoods used in the study corresponds with Chambers' (1995) definition of a living which is adequate for the satisfaction of basic needs, and secure against anticipated shocks and stresses (both internal and external). Wishing to avoid a rigid definition that may result in too narrow a focus on specific technologies, the PTW project has used the following working 'definition' of sustainable agriculture for purposes of clarity (Box 1).

The above elements, as contained in the PTW understanding of sustainable agriculture, indicate a focus that goes beyond technological considerations to encompass examination of social and economic aspects. Thus the PTW research focus has necessitated 'going beyond the farm boundary', as well as looking at on-farm practices.

Box 1 A working definition of sustainable agriculture

Sustainable agriculture:

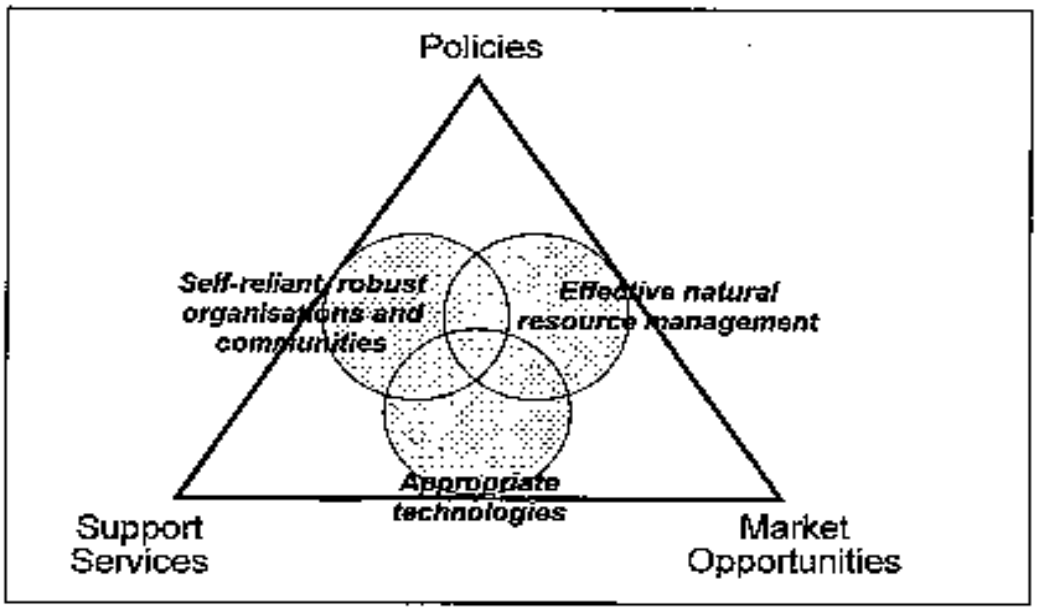
- incorporates biological processes such as nutrient cycling and pest-predator relationships;
- optimises the use of external and non-renewable inputs;
- encourages full participation of producers and consumers in problem solving and innovation;
- ensures more equitable access to entitlements;
- makes full use of local knowledge;
- diversifies the production system;
- increases self-reliance; and
- has strong links to the local rural economy.

IIED, 1998. Golden Gate Workshop Report

Key elements of Sustainable Agriculturally-based Rural Livelihoods

The concept of Sustainable Agriculturally-based Rural Livelihoods (SARLs) is central to the PTW research. Identification of the key elements of 'success' of SARLs (Figure 1) provides a conceptual framework to aid analysis.

Figure 1 The relationships between the elements of sustainable agriculturally-based rural livelihoods (SARLs)



Elements of Sustainable Agriculturally-Based Rural Livelihoods

In elaboration of the definition presented in Box 1, and to assist with analysis of case studies and livelihood strategies, the conceptual framework illustrated in Figure 1 was developed and used in the Free State research. To assess the degree to which policies and institutions have contributed, and are contributing, to sustainable agriculturally-based rural livelihoods (SARLs), it is first necessary to identify the key elements of 'success' (Figure 1), when considering SARLs. Each of these elements are briefly summarised below:

- *Self-reliant, robust rural organisations/communities.* This refers to the people themselves and their social organisation – the human resources and social organisations and networks – but emphasises the importance of local organisations with their own structure, culture and management. This element corresponds to the increasingly used notion of 'social capital' (see for instance Serageldin and Steer, 1994; and Carney, 1998). Social capital includes the idea of more horizontal social relationships, and higher levels of participation in cross-cutting social organisations and networks, which have been equated with more efficient, effective and inclusive government (Putnam, 1993; in Bebbington, 1999).

- *Effective natural resource management.* SARLs depend on an available natural resource base that includes physical and biological resources. This natural resource base needs to be sustainably utilised in order to maintain the health and diversity of the ecosystems on which livelihoods and rural economies depend for their survival – that is, the natural capital. Risks arising from natural phenomena such as weather and climate also need to be managed optimally for sustainable livelihoods.

- *Regenerative/appropriate technologies.* Technologies should be appropriate both to the users and the situation if sustainability is to be enhanced. Appropriate technology is less about the type of technology used, than the support given to people to make their own

technology choices and assisting them to develop or adapt the technologies that they use (Croxton, 1995). Users of technology are best placed to decide which technologies to adopt or adapt, and technical changes made by the users themselves are more likely to meet their needs.

The above covers the capital assets of people (Scoones, 1998, Carney, 1998), and recognises the importance of them for sustainable rural livelihoods. As Bebbington (1999) points out, assets or capitals are not simply resources that people use in constructing livelihoods, but are assets that give them the capability to be and to act, and ultimately to change the world. There are also external elements influencing the sustainability of local rural livelihoods, as described below:

- *Policies and Processes.* SARLs operate within a wider policy environment. Different elements of policies may constrain, promote or have no effect upon the attainment of sustainable livelihoods. Policy is not only the product of government, but reflects the influence of a range of actors. Each actor has their own goals, which are pursued in the policy-making process. Understanding these goals is essential in understanding what a particular policy aims to achieve and which actors or stakeholders do or do not benefit from a policy. These should be determined in dialogue with the people they will affect, thus underlining the importance of the nature of the policy-making process, and in particular how inclusive this is, in determining the end result.

- *Support services.* A vast range of services are provided by the private, public and NGO sectors. All influence SARLs to a greater or lesser extent. In South Africa, government services have historically been isolated from, and not based on, the needs of their clients. However, a number of factors, including increasing democratisation, lack of financial resources, and some pressure from the global community and donors are forcing government services to rethink their roles. This has led to the privatisation of certain services, exploration of different approaches to service delivery and acknowledgement of the role of farmers and their organisations in service provision. Public

sector service organisations are directly influenced by the policies of the day, while other organisations take advantage of the policy and/or market environment to achieve their goals and objectives. The global market environment is increasingly playing a dictating role in the macroeconomic and trade policies of national governments, and South Africa is no exception to this. In order to receive effective and appropriate services, farmers and farmers' organisations must have the ability to question the actions of the service providers. This is only possible where all participants are acknowledged to be involved in the production and perpetuation of knowledge and power relations. This discourse is the practice of power relations that shapes most social life (Coetzee and Graaff, 1996) and reveals the complex interlinkages among the participants in development.

- *Market opportunities.* This refers to both the macro- and micro-economic environments that impact on SARLs. Market opportunities determine the type of activities undertaken by the organisation/individual in order to secure its financial and economic survival. However, there is no guarantee that an organisation will be maintained into the future if the market changes. The market influences the agenda of service providers, especially those in the private sector. However, effects on public sector service providers are growing as the requirement of fiscal discipline bites deeper into budget allocations.

Even if all the above elements are incorporated effectively into livelihood systems, neither the organisation nor the resource management systems are inherently stable. The functioning of the organisation is dependent on its continued ability to adapt to opportunities and to manage risks (Hobley and Shah, 1996), and secure against anticipated shocks and stresses (both internal and external) (Chambers, 1995).

Methodology

The PTW research project in South Africa used a range of methods to explore local, provincial and national perspectives on sustainable agriculture and SARLs. The Free State province was selected for the study as it was felt to be the leading province in terms of land and

agricultural policy implementation at the time. Some of the activities carried out at national level and in the Free State province were designed to be similar, to facilitate a comparative analysis of policy perspectives.

The main methodologies used were:

- A provincial baseline study (Marumo, 1998) explored the livelihood strategies of the five client groups of the Free State Department of Agriculture: emerging farmers (those farmers who used to practice farming under former homeland governments), commercial farmers, peri-urban farmers, land reform beneficiaries and farm workers. This was supplemented with PRA exercises investigating rural livelihoods in Parys/ Tumahole and Jacobsdal, two agriculturally-based rural towns and districts in the Free State.
- Participatory action research at the provincial level resulted in the development of a further detailed case study of the Kutlwanong Farmers Trust (KFT), one of the earliest examples of land reform in the Free State (Carnegie et al, 1998). This component assessed the extent to which the KFT has progressed towards the goal of sustainable agriculturally-based rural livelihoods. Additional case studies form part of both the national and provincial research elements.
- Reviews of relevant literature at national and provincial level.
- National (Urquhart and Fakir, 1998) and provincial (Madolo, 1998) surveys, using the same questionnaire, to explore and analyse stakeholder perspectives of what constitutes sustainable agriculture and SARLs, how they are being achieved/promoted, and the policies that are felt to support or constrain them.
- Overviews of relevant policy at national and provincial levels.
- Compilation of national and provincial reports synthesising findings of the various research activities.

In the livelihood analyses, the land reform case study and the individual case studies, the concept of the elements of SARLs (Figure 1) was used as a framework for analysis, focusing on how policies and institutions impact upon the sustainability of agricultural rural livelihoods. This framework also forms the basis for the overall synthesis presented in this report.

SARLs Profile – elements of sustainable agriculture

This section briefly describes the movement towards sustainable agriculture and outlines five very different livelihood strategies of rural people in the Free State province, towards developing a SARLs profile for the case study area in South Africa. A discussion of the differing perspectives on sustainable agriculture and rural livelihoods, as revealed in the provincial and national surveys, both adds detail and broadens the profile to one that sketches a picture of the national context for SARLs.

3.1 The move towards sustainable agriculture

The international move towards sustainable agriculture has occurred within the recognition that "the greatest damage that humans inflict on the Earth – and, by implication, the greatest threat that humanity poses to its own future survival – is through the practice of agriculture" (Yeld, 1997:48). This is mirrored by a growing awareness in South Africa, evidenced by actions of government, public groups, NGOs, current policy directions and the introduction of programmes like the LandCare initiative, based on the Australian model.

Currently, there are examples world-wide to suggest that agriculture which is pro-sustainability and pro-people has the potential to contribute to greater agricultural production, as well as environmental regeneration and local economic development. Some examples include hemp production in the USA, organic cotton in California, and the demand for organic herbs and vegetables in Europe. However, these examples are just "islands of improvement". Hence the motivation for the PTW project, which seeks to identify policy and non-policy

conditions that will promote the broader spread of sustainable agricultural practices and regenerated rural economies.

Before considering in some detail the range of agriculture-based livelihoods that are found in South Africa, and the divergent views of the range of agricultural stakeholders, it is necessary to understand the historical context of agricultural policy. The following section provides a brief background. Further detail on the current policy context is provided in section 4.

3.2 History of agricultural policy in South Africa

The first Native Land Act of 1913 began the systematic process of removal of black people from productive agricultural land to 'tribal reserves', which later became known as homelands. Since then, over 80 Acts of Parliament were passed rendering assistance to the white commercial farming sector (NDA, 1998), and simultaneously actively discouraging agriculture as a means of sustaining livelihoods in the homelands. The intention was to ensure a constant supply of labour for the mines and to serve the white agricultural sector. Since the transition to democracy in 1994, an unprecedented surge in policy dynamism is evidence of the government's commitment to undo these previous policy distortions that were so harmful to rural livelihoods and sustainable small-scale agriculture.

South Africa has a highly skewed and dualistic agricultural sector. Commercial agriculture, mainly white-owned and comprising some 50,000-farm units, occupies some 85 million hectares, while resource-poor, mainly black agriculture has access to 17 million hectares, shared between some 500,000 families. White-owned farms are capital intensive and developed, the remainder generally resource poor. Of the white-owned farms, some 20% produce 80% of all produce, further skewing the ownership patterns. Thus some 10,000 farm-units have access to the bulk of agricultural natural resources, and are highly developed and commercialised.

Such concentration has been compounded by state policies of subsidisation over most of this century. These policies openly supported the concentration process from about 1970 onwards, with resultant distortions including systematic discrimination in land allocation, access to markets, provision of infrastructure and general developmental services, agricultural credit and services. Far from emerging because of real economies of scale in the large commercial sector, the dualistic structure has been sustained through relentless depression of the profitability of small-scale agriculture and consistent subsidisation of white large-scale commercial agriculture (Binswanger and Deininger, 1993). The legacy of past discriminatory policies and institutions is still pervasive, despite a changing policy environment.

By 1990, state subsidisation to commercial agriculture was no longer economically or politically viable. Agriculture became much more market driven, with a set of policies which is likely to produce less distortion and promote more sustainable agricultural practices in the long term. In 1992, the National Party government provided some R2.5 billion in debt relief aid to agriculture, as a final solution to its debt problem. Yet agriculture remains deeply in debt, and the possibility of extended drought causes financiers to be extremely cautious about advancing more production credit to keep agriculture going.

3.3 Agriculturally-based rural livelihoods

The provincial baseline survey used the client categories of the Free State Department of Agriculture as the point of departure for analysing SARLs and getting farmer perspectives on sustainability. These included large-scale commercial farmers, farm workers, peri-urban farmers, communal farmers in former homelands, and land reform beneficiaries. A brief analysis of their livelihoods is given below using the elements of sustainability (Figure 1). The analysis reveals divergent livelihood strategies, consistent with the divided nature of agriculture in the Free State province, and indeed in the country as a whole.

Large-scale commercial farmers

These farmers largely benefited from the policies and support services of the previous government. Currently, however, they are serviced mainly by the private sector. These farmers are well educated and have access to resources including capital intensive technologies suited to their large-scale, high input agriculture. They are well organised into local associations, affiliated to provincial unions, which fall under the umbrella of the national South African Agricultural Union (SAAU). Natural resource management has not been a priority and environment was often neglected in the pursuit of financial gains. However, high levels of indebtedness amongst many indicate that this has not been translated into long-term financial sustainability.

Many large-scale commercial farmers feel threatened by the policies of the new government. Liberalisation of markets and the abolishing of the marketing boards have unsettled them as, while they have the means for production, they have difficulty in marketing their produce. It is common for farmers near to town to sell directly to the townships, often using local agents. They feel that the government needs to play a role in protecting and stabilising markets for sustainability. Many farmers are

Semi-communal vegetable garden

moving away from the traditional cash crops of only wheat, maize, sorghum, sunflowers and potatoes, and traditional sheep and cattle. They are diversifying to include niche market crops, game farming, eco-tourism and value adding through agro-processing on farm. See Box 2 for a description of contrasting approaches to diversification adopted by large-scale commercial farmers.

In general, many large-scale commercial farmers are willing to help new entrants who want to farm in a similar fashion, but do not support the current implementation of land reform policies, which they see as creating squatter camps and townships of poor people (FSDoA, 1998).

Box 2 Different approaches to diversification for large-scale commercial farmers

Game farming

Bishops Glen is a farm of 1,200 ha in the Free State. It is a mixed farm that includes irrigation, dairy and game farming. As a result of changes in marketing and trade, the farmer decided to diversify into game farming and intensified his irrigation section as a buffer against these external factors, enhancing the sustainability of his farm. He has invested in fencing a large portion of his farm to release a variety of game species. Hunters hunt during the winter and he provides the facilities. The income is still small, but he believes by increasing the number of game, that section of his farm can become self-sustaining.

Eco-resource management and tourism

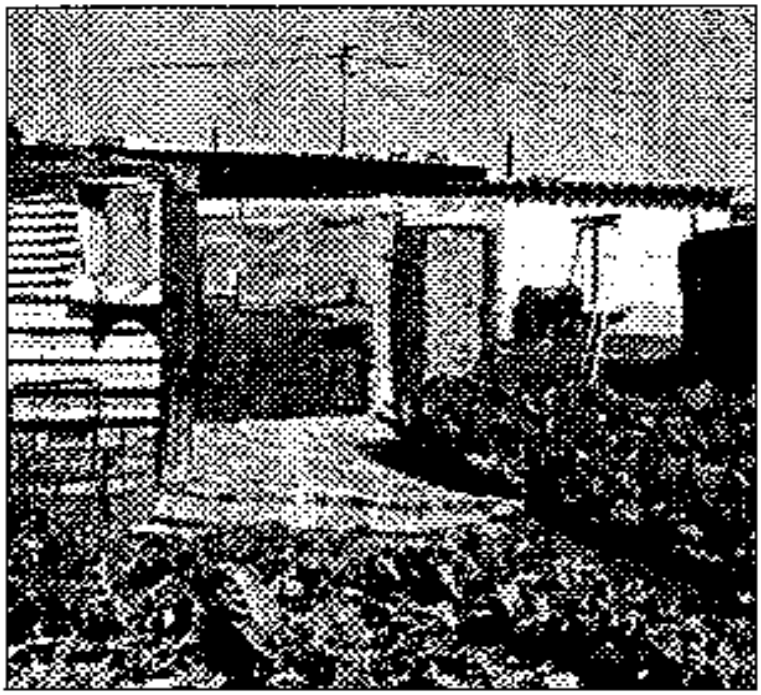
The Lunds of Elandsfontein farm in the Great Karoo (arid region of South Africa) have enhanced the sustainability of their farm both ecologically and economically. Karoo farms are traditionally sheep farms. However, on Elandsfontein they have introduced a livestock mixture of sheep (Merinos), goats (traditional "Boerbok") and cattle (traditional "Ngunis"). The latter are a hardy, traditional breed of cattle from the eastern part of the country, chosen as European breeds would not survive the harsh conditions. They have also encouraged the breeding of game on the farm and have a well-developed system of rotational grazing and stocking densities to preserve the fragile resource base. They market their livestock directly to the townsfolk of Beaufort West who purchase them live for traditional ceremonies. The Lunds have built cottages and market their farm as an eco-tourism stopover for travellers, with tours of the farm and the local townships.

Farm workers

There are about 160,000 farm worker families in the Free State. Farm workers are difficult to access as they live on the property of large-scale farmers. They are often under-paid and live in poor conditions, despite the enactment of new national legislation such as the Basic Conditions of Employment Act. Because of their location they are isolated and not unionised, thus making them amongst the most marginalised of low-income earners. During the economic decline in the mid-1980s, many farm workers were evicted from farms and moved to the townships of rural Free State towns. Farm workers are usually allocated some land by the owner on which to keep some livestock and produce some crops (mainly vegetables), using low-input technologies. These resources are usually over-exploited due to population pressures. In the past, farm workers were not even considered as possible clients by state support services. The Extension of Security of Tenure Act (1997) was introduced to give farm workers security of land tenure on commercial farms, but has resulted in many evictions in the short term. Township people often work during peak labour times on a temporary basis on farms. Pay is very low, (R15 per day excluding lunch) which results in many of the unemployed not considering it worthwhile.

Land reform beneficiaries

These are people who have limited skills in farming, but are expected to run a commercial farm in a communal manner. Their organisation is often weak leading to difficulties in group dynamics, and in accessing resources and markets. The baseline survey revealed that most land reform beneficiaries do not understand the policies by which they acquired the land. They are unclear about the agricultural policies, and are often not provided with appropriate post-settlement support by the various role-players/stakeholders – both private and public sectors. This includes the use of technology which is often imposed, inappropriate and expensive. They are given limited market exposure and support, and lack the capital and knowledge of the imposed equipment. Such farmers admitted neglect of the natural resource base, as their main consideration was financial/economic.



Peri-urban vegetable garden

Peri-urban farmers

The Free State has approximately 90 rural towns, which are growing in numbers due to rural-urban migration. There are many unemployed people in the towns, who live in the townships and informal settlements in poverty. Many of these unskilled people, some of whom are former farm workers, practise part-time agricultural activities in their backyard or on the commonage surrounding the town. Some are organised into farming groups such as cattle owners or community market gardeners. These farmers, numbering about 260,000 are the main focus of the FSDoA, which, however, often neglects the poorer groups, such as the unmarried women with children and the youth (FSDoA, 1998). These farmers use the commonage, which is becoming better managed with the help of the FSDoA, and in some cases expanded through land reform. Communal infrastructure and technologies are being encouraged. These producers have a ready market close by and are often engaged in value-adding practices

Small-scale producers in former homelands

These farmers, estimated at about 4,000 in the Free State, farm in the former homeland areas of QwaQwa and Thaba'Nchu on traditional

communal land. In the past, homeland governments provided them with support and services in ways that created dependency and were not sustainable. These farmers produce largely for subsistence and are hampered by limited physical infrastructure (roads, marketing, communication) and institutional support. Although very poor, government has tended not to support such areas in the Free State. The farmers are organised in associations and work within a tribal system of land allocation. These areas are often densely populated and conflict is arising relating to urban and rural planning, for example the restriction on the keeping of livestock in Thaba'Nchu as it is now considered an urban area.

In terms of organisations, resource management systems and technologies used, the five client groups of the FSDoA exhibit quite different livelihood strategies, which presents a challenging environment for service providers. The Free State Department of Agriculture has prioritised in order to tackle this, with new policies requiring officials to spend 80% of their time and resources on the "new clients" (i.e. small-scale (black) farmers) and 20% on the traditional clients (i.e. large-scale commercial (white) farmers).

The following section adds further layers to the specific and local picture of the livelihood strategies described above, through considering a broader range of voices speaking out on the subject of SARLs.

3.4 Differing perspectives on sustainable agriculture and SARLs

Both national and provincial research processes revealed divergent, even contradictory, understandings of the concept of sustainable agriculture. This section draws largely on the findings of the national and provincial surveys to elaborate on this point.

Survey responses endorse the perception that agriculture in the country is fragmented. Many noted the duality between "commercial" and "subsistence" agriculture, while others spoke of "small-scale"

agriculture. The perception of yet another sector, which was called "sustainable", adds a further dimension to the agricultural mosaic. Further examination of responses indicates perceptions that "subsistence" does not mean livelihood in many cases, and "commercial" is not always economically viable, when the implications of subsidies and off-farm costs are taken into account. And, in many cases, it is felt "sustainable" agriculture does not fulfil the promise of its title.

The Directorate of Agricultural Resource Conservation (DARC) of the Department of Agriculture (DA) have set out their understanding of sustainable agriculture to encompass productivity, conservation, social factors and the need to combine modern and traditional methods. However, divergent responses indicate that this policy statement is not broadly understood or accepted. Many stakeholders used "commercial" as an antithesis to sustainable agriculture, while others use it as a synonym. As respondents have noted, there is an urgent need to develop common goals in the agricultural arena, directed towards a broadly acceptable vision of sustainability. Many organisations included some kind of disclaimer as to the official nature of responses to the questionnaire, indicating a lack of clear policy standpoint on sustainable agriculture.

While the PTW project has worked within a particular understanding of 'sustainable agriculture', we may well ask what this truly means – will we know sustainable agriculture if we see it, whether it is practised by a resource-poor or commercial farmer, or is sustainable agriculture the preserve of those who practice ecological agriculture? Development of an understanding of the term that focuses on necessary components, as in Box 1, rather than a rigid recipe for a particular approach, may be helpful in addressing this question.

Responses to the national and provincial PTW surveys were analysed for their multi-dimensional and integrated nature using a simple framework. This involved consideration of whether economic, ecological and social factors were included in the "definition" of sustainable agriculture provided.

Table 1 Inclusion of three key elements in definition of sustainable agriculture

Basic factors included in response	Ecological, economic and social	Economic and social	Economic and ecological
Percentage of respondents – National survey	53%	37%	89%
Percentage of respondents – Provincial survey	20%	Data not available	Data not available

Only a fifth of the Free State respondents indicated a holistic understanding of sustainable agriculture, as opposed to just over half of the national survey participants. This can be explained to some extent by the fact that Free State agriculture is dominated, possibly to an even greater degree than elsewhere in the country, by large-scale, commercial production. Traditionally, government policies have created a favourable environment for farmers and service providers to focus on production at the expense of the environment, and towards the end of apartheid, the agricultural economy. This has resulted in a narrowly focussed production mindset within the Free State Agriculture sector.

For both surveys, where one of the three key elements was lacking from an articulated understanding of sustainable agriculture, it was most likely to be the social sphere. This points to a lack of recognition of the integral role of social and cultural dimensions in rural livelihoods on the part of many respondents. Exceptions were mainly from the NGO sector, which tended to reveal a clearer understanding of this. Additionally, NGOs reflected different priorities, with more emphasis on rural development and far more reference to systems thinking. Not surprisingly, 'definitions' of sustainable agriculture were often formulated on the basis of the objectives and mode of operation of an organisation or individual. Thus both national and provincial responses to the survey showed different priorities for the commercial/private sector groupings, with the perception that economics and profitability constitute the bottom line for sustainable agriculture. While these

groups made some reference to ecological issues, there was little consideration of social factors. Findings of the provincial baseline survey indicated that while emerging farmers, peri-urban farmers, land reform beneficiaries and farm workers experienced difficulty defining sustainable agriculture, they know and comprehend some essential elements of sustainable agriculture such as economic viability, job creation and increased productivity. However, the missing element from their understanding of sustainable agriculture was found to be the impact of agriculture on the environment (Marumo, 1998), as their priority was more short-term and economic.

Both national and provincial surveys indicated broad agreement on the importance of the link between sustainable agriculture and rural livelihoods. However, motivation differed amongst organisations. Thus commercial farming interests largely concentrated on economics and profitability issues, whilst non-governmental organisations (NGOs) working with subsistence farmers emphasised food security, long term ecological stability, and social and political empowerment. A theme of the national survey, supported by opinions reflected in the literature review, was that although achievement of sustainable agriculture alone would not be the economic saviour of the rural areas, it would be fundamental in terms of defining the framework for integrated long term rural development.

South African literature surveyed reveals much consensus on the profound effect of the apartheid system on the utilisation, access to and ownership of natural resources (for example, see Lebert, 1994; and Njobe, 1993). Indeed, redressing such past inequities is a significant element of the current policy context. A minority of survey responses echoed this, pointing out that sustainable agriculture was dependent on first gaining secure tenure; only then could sustainable land use follow. However, survey responses on the whole, with exceptions largely in the NGO sector, did not refer to the link between past discriminatory practices and the unsustainable nature of much farming in South Africa. This causal link was recognised in the 1995 White Paper on Agriculture, as well as the current Discussion Document on Agricultural Policy (discussed in the next section).

Between firmly held positions that equated "sustainable agriculture" with commercial industrial agriculture and measured it only in terms of economic factors, there was also recognition of the dynamic nature of terminology, in response to changing agricultural context. As a spokesperson for an integrated provincial agricultural union, formed in 1997 out of a merger between organisations representing large-scale, small-scale and emerging farmers in the province, noted:

> *"In the past, sustainable agriculture in South Africa was considered to be if a farming unit could support a self-employed farmer yeoman and family at a particular economic level. Now, it is viewed as the use of agricultural resources in a productive way with no resource degradation. Thus it is now defined more broadly, irrespective of farm size etc., as the avoidance of resource degradation."*

Despite the presence of broadly defined common key elements, details and nuances of the responses reveal in many cases fundamentally differing perceptions of the concept of sustainable agriculture. The following two extracts provide one example of this juxtaposition.

> *"Sustainable agriculture is a process where agricultural resources such as land and water are utilised in the production process to produce agricultural products at a profit while maintaining the production potential of the resources."*
>
> (Representative of a large and well-established commodity producer's organisation that has traditionally represented white commercial grain farmers)

The above definition indicates an almost exclusively economic focus. While mention is made of maintaining the potential of resources, this is purely for production, with no inkling of broader societal motivation. In contrast, the following quotation encompasses social, political, ecological and economic dimensions, and their inter-dependence.

> *"Sustainable agriculture is maintaining a balance between nature and what man does, so it is promoting the level of soil fertility, conserving nature and harvesting water. Actually it is production*

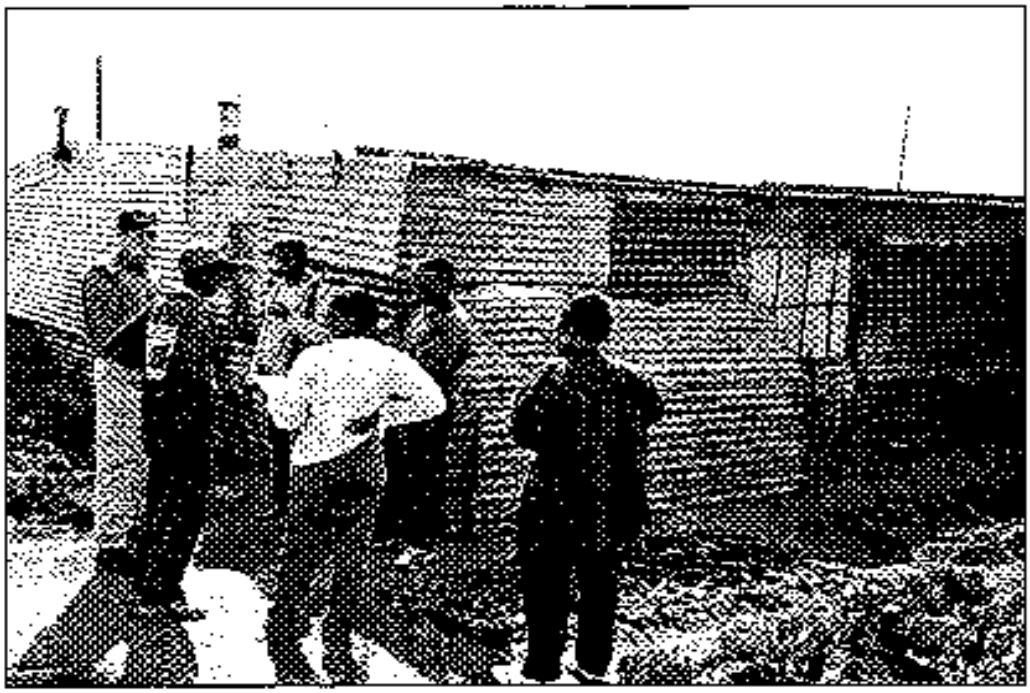
through conservation. It is about sustaining production, not using high inputs and not looking for maximised profits... A sustainable approach also needs to be balanced with people's commitment. Sustainable agriculture is about individuals controlling their own sustainable food production."

(Representative of an environment/development grassroots NGO, who is also a black female farmer)

As the discussion document *Agricultural Policy in South Africa* (Ministry for Agriculture and Land Affairs, 1998) had not been released at the time of the survey, it is not possible to make a systematic comparison of official positions with stakeholder perspectives. A number of respondents to the survey were from government departments and thus their response accorded with emerging official positions outlined in section 5. In some cases, officials were reluctant to provide much detail until formal policy documents were released.

The integrated view adopted by NGOs is reflected in the Integrated Catchment Management policy of the DWAF, which was also a policy principle contained within the 1995 White Paper on Agriculture (see next section). However, feelings from many survey respondents were that despite some good indications in policy, implementation of *sustainability principles is not* occurring on the ground due to lack of capacity, lack of understanding by personnel on the ground, and in some cases the drive for rapid delivery that results in environmental measures being ignored. An example provided was the land reform process, where some feel that the window of opportunity to encourage sustainable agricultural practices in emerging farmers is being lost. Realisation of the need, highlighted mainly by NGOs and research institutions, to adopt an integrated approach to rural development is being hampered by the lack of a lead agency for rural development. The feeling expressed by respondents that agriculture will be but one component, albeit a fundamental one, of regenerated rural economies corresponds with statements within the Rural Development Framework. Thus in many cases lack of effective policy implementation measures and sufficient resources to operationalise these are critical limiting factors at present.

The diversity of perspectives on sustainable agriculture and SARLs apparent in South Africa today highlights the need for greater inclusivity in the policy making process, if policy is to be broadly acceptable and yet cater for the fragmented agricultural context. Once again a window of opportunity is open, in this period immediately after the second democratic elections of June 1999, for adaptation of policy principles contained within the current discussion document on agricultural policy. South Africa also has a new Minister of Agriculture. However, the policies and institutions that will affect SARLs and rural development are to be found within a range of sectors, of which agriculture is but one. The following section discusses the extremely dynamic policy context, and the implications of this for promotion of rural sustainability.



Visit to backyard garden

Policy and institutional profile

4.1 Introduction

When the ANC government took power, and new politicians took control of government departments, they were faced with enormous constraints, as well as an intense desire to deliver. New incumbents determined to produce tangible results, have found that working the bureaucracy is not so easy, especially when many new civil servants are not necessarily well trained. Given the high levels of unemployment, and poverty especially in rural areas, there was a strong focus on creating employment and sustainable livelihoods. But translating that into reality has not been easy to achieve. In some areas of government, progress has been rapid, while in others, it has been painfully slow. The combination of an already over-staffed government, pressure for rapid affirmative action appointments, and conditions of employment that have made it difficult to reduce the size of government departments, have made the transformation of most government departments a slow process.

In general, the agriculture sector has progressed well in terms of productivity since 1994, largely because of market liberalisation policies and good export demand. It has also benefited from being relatively drought free in the last five years. There has been some progress with advancement of emerging black farmers, but the resource-poor agricultural sector, where most poverty is concentrated, has hardly changed in the last five years. Alarmingly, farm employment has fallen rapidly, partly driven by perverse effects of policies designed to provide security of tenure to farm dwellers (see below) and progressive labour legislation.

In the area of land reform, there has been some return of land to dispossessed communities, land granted to many communities and

groups who are battling to create sustainable livelihoods, and a few worker equity schemes. Performance has been patchy, with only a few real successes. State farms in both agriculture and forestry have begun to be redistributed to former employees or communities, but the process is slow with many setbacks. In other areas of rural policy, like water supply, there has been some good progress with improving access to domestic water, but funds have dried up and the rate of delivery has slowed dramatically.

Crime in rural areas has become a major focus area. With some 500 farmers murdered in 1998, protests by the South African Agricultural Union (SAAU) led to a national convention on rural crime, an admission by government that it was a serious problem, and the promise of an integrated anti-crime and rural protection plan. While crime is an endemic problem in all parts of South Africa, farmers are perhaps more vulnerable because of their isolation. Most crime is ascribed to theft, but the violence associated with this might have political undertones, even if only of a general nature.

In the sections below, we examine some of the policy and non-policy constraints on sustainable livelihoods, and look at ways that these might be overcome. A range of other policies, especially macro-economic policy, affects agriculture. Indeed, the effects of macro-economic policy, such as interest rates, import restrictions and others, are likely to be greater than any agriculture specific policy. Thus in this section, we review policy in a number of sectors (such as water, agriculture, forestry, land reform and environment) which impact on SARLs, but also highlight that there is no lead agency championing and integrating policies for rural development. Interwoven into this policy review, we discuss changes to the agricultural institutions that have the responsibility for implementing policy. Institutional change has in many cases arisen from policy reform, and often in order to reorientate support services, in order to make them more responsive to the broader client base of national and provincial agricultural departments. The dynamic market environment, linked to the changing global agriculture and trade context, and South Africa's increasingly outward orientation, is also discussed in this section. Thus the scope of section 4 corresponds

to three more 'external' elements of the SARLs framework illustrated in Figure 1, namely the environment of policies, support services and market opportunities in which South African farmers operate.

Given the huge number of policy changes being made since 1990, it is difficult to make any firm predictions about cause and effect with regard to policy, but the main drivers of change in agriculture, and the likely impact on sustainability are analysed.

4.2 Macroeconomic policies

Macroeconomic policies provide the constraints within which sectoral policies are situated. Macro-economic measures are contained in the government's Growth, Employment and Redistribution strategy, GEAR. The GEAR, aimed at more stringent fiscal policies often described by critics as South Africa's own home grown Structural Adjustment Programme, is aimed at creating jobs, reducing inflation and cutting the budget deficit. It relies heavily on high interest rates to attract foreign investment, and thus maintain South Africa's net foreign reserves. GEAR also places a great deal of emphasis on export growth as integral to success, with it's main objective a 10% export growth rate per annum by the year 2000. For the agricultural sector, the government's intention is to create a free market pricing system, based on competition with global trading partners. Tariff restrictions will be reduced in line with GATT targets. This policy has been highly successful in keeping food price increases below inflation, though it has been helped by a series of good dryland crop harvests.

Agricultural exports have been buoyant, as new markets have opened up for South African products. Environmental and food safety standards abroad have helped to make South African agriculture more aware of sustainability issues and have moved producers, researchers and support services in the general direction of sustainability. Some agricultural sectors such as poultry and dairy have been affected by export competition, (feared by farmers to be destroying the industry thus jeopardising sustainability), but on the whole the commercial

agricultural sector has done well out of the new open market system, with the system being responsive to needed changes in tariffs.

However, these effects have been experienced in different ways by large-scale commercial farmers and by small-scale emerging farmers. For instance, positive effects such as increased access to markets are experienced by exporters only. With many who have acquired land through the land reform programme battling to make a livelihood for themselves and their families, export is not an avenue open to many new farmers. The latter are also likely to be hardest hit by negative effects of globalisation such as reduced state support services to meet requirements for increasing fiscal discipline. Additionally, liberalisation has affected resource-poor farmers regarding input supply and marketing. Communal farmers in the homelands were often assisted by government with inputs as well as subsidised government credit schemes. These have been done away with, and the private sector has been slow to move in because of poor infrastructure and unreliable profits, which has left resource-poor farmers in a worse situation in the short term than before.

While South Africa, like any other country that is rapidly emerging onto the global stage, has no option but to embrace policies of market liberalisation, the country also has a clear and recognised duty to address the inequities of the past. This necessitates intervention on the part of the state, to facilitate the development of emerging farmers so that they are able to create sustainable livelihoods, and ultimately to engage as global players should they so wish. It would appear that an integrated and well-resourced rural development strategy, driven through high-level political commitment, should be a cornerstone of this approach. The following section explores the reality of rural development policy in the country.

4.3 Rural development policy

Agricultural policy and implementation exists in the absence of a lead agency responsible for rural development. Rural development policy is encapsulated as a framework document rather than a national policy

(Rural Development Framework, 1997). This is partly due to the lack of a lead department that is fulfilling or willing to undertake this overarching role, to ensure that issues relating to rural development are taken into account in different policies and government departments. This has obvious negative implications for the development and implementation of policies to create and support strong rural economies. While rural development issues are addressed sectorally, there is still a need for a co-ordinating mechanism at central level to ensure rural issues are incorporated in all development strategies, many of which have a strong urban focus. Discussions were underway prior to the 1999 elections to see whether such a co-ordinating body could be placed in the Deputy President's Office. It was felt that this would provide for the necessary high-level commitment, and would be an effective way to co-ordinate the actions of line function departments. It is not clear whether this strategy is to be pursued post elections. The main thrust of the Rural Development Framework is poverty alleviation through job creation, ensuring that national and provincial governments empower local governments to deal with development needs on the ground, infrastructure development and capacity building.

In the Free State the former MEC for Agriculture took the lead in forming a Rural Development Cluster of relevant ministries, namely Agriculture, Social Welfare, Health, Local Government and Housing, Education, the provincial office of the Department of Land Affairs and the Chief Directorate of Development and Planning. The Chief Directorate of Development and Planning with the co-operation of Land Affairs has developed (with other cluster departments) a Rural Development Strategy for the Free State. The intention is to focus attention of government departments, as well as other service providers and role players in a co-ordinated manner on developing rural areas. Key areas have been identified to be concentrated upon. Although this strategy has helped to highlight the importance of rural development and create structures for co-ordination, this has been mainly at provincial level. More work needs to be done in creating ownership among role-players in order to operationalise this strategy and improve co-ordinated implementation at a local level.

4.4 Agricultural policy

Introduction

The Constitution (Act 108 of 1996) defines agriculture as a functional area of concurrent national and provincial competency. Thus both provincial and national government departments are responsible for formulation and implementation of agricultural policy. Other concurrent national/provincial constitutional competencies related to agriculture are disaster management, environment, pollution control, soil conservation, and urban and rural development. Uncertainty around provincial roles, within the context of administrative problems and inadequate staffing in many provinces, has hampered implementation of nationally drafted policies. The process of sorting out provincial from national government functions (with the resulting service gaps and duplication), and the absence of effective rural local government, has sapped energy and taken time. While some provinces have done better than others, there is still a long way to go before government of rural areas can be considered effective. Still, agriculture is top of the governance scorecard in some provinces, where the shambles in education and health is the primary concern of provincial administrators.

Agricultural policy has recently been reviewed and presented in a Green Paper discussion document (*Ministry of Agriculture and Land Affairs*, 1998), and the major guidelines in the Green Paper are already in the process of implementation. Prior to exploring these in some detail, the 1995 White Paper on Agriculture is discussed.

White Paper on Agriculture 1995

Before the break-up of the Government of National Unity, the National Party controlled Ministry of Agriculture brought out a policy document setting out guiding principles. This spoke of addressing the "uneven income distribution" in agriculture and rural communities through broadening access to agriculture via land reform and bringing small-scale farmers into the mainstream of state support, while recognising that rural infrastructure was a key constraint to this.

The vision for a 'new agriculture' was stated as:

> *"A highly efficient and economically viable market-directed farming sector, characterised by a wide range of farm sizes, which will be regarded as the economic and social pivot of rural South Africa and which will influence the rest of the economy and society."*
> White Paper on Agriculture, 1995, Preamble.

The White Paper defined sustainable agriculture as "farming systems which are productive, economically viable and environmentally sound over time". An important move from past policy was the recognition that "small-scale" is also part of agriculture, and that special attention should be given to the needs of small-scale farmers in terms of marketing, financial services, technical support etc. The White Paper also stated quite clearly the need to favour "economically justified" labour intensive methods, and noted "It was ill-conceived to try to circumvent labour problems by means of costly large-scale mechanisation in the 1970s". Policy principles in the White Paper also began the process of dismantling of the former single channel marketing *systems, discussed below.*

Green Paper on Agricultural Policy

In 1998, after an 18 month policy development process, that involved 11 different working groups and some provincial workshops, the Discussion Document *Agricultural Policy in South Africa* was released. The NDA worked together with NAFU for the provincial workshopping process, with the intention that disadvantaged farmers who would not be able to make a meaningful input from reading discussion documents, would still find a voice in the process.[5] Despite this consultative process, there are many (including farmers' organisations and grassroots groups) who feel that participation did not go far enough and that they were excluded from the process. The objectives of policy reform are contained in Box 3.

The first objective outlined above is designed to further the goals of GEAR, as summarised above, through developing an increasingly

5 Tracey Simbi, Special Advisor to the former Minister of Agriculture and Land Affairs and compiler of the discussion document, personal communication, 14/6/99.

Box 3 Major goals for agricultural policy reform

The three major goals for agricultural policy reform, as stated in the Discussion Document on Agricultural Policy (Ministry of Agriculture and Land Affairs 1998), are the following:

- to build an efficient and internationally competitive agricultural sector
- to support the emergence of a more diverse structure of production with a large increase in the numbers of successful smallholder farming enterprises
- to conserve the country's agricultural natural resources and put in place policies and institutions for sustainable resource use

outward-oriented agricultural sector that will generate more foreign exchange. The emphasis on developing an enabling environment for the growth of smallholder agriculture indicates a focus on poverty alleviation and the goals of the Reconstruction and Development Programme (RDP), with the final objective indicating a commitment to sustainability. Achievement of these will necessitate a fine balancing act on the part of government, as export orientation and maximisation of profits, promotion of smallholder agriculture and sustainable utilisation of natural resources are not necessarily complementary goals. The Green Paper goes on to outline specific policies for the attainment of these goals. Policy principles and some of the new programmes contemplated are outlined below. It must be noted that while a number of these programmes are already being implemented, the discussion document has not yet been formalised into a White Paper. There may well be some changes to agricultural policy under the new Minister for Agriculture and Land Affairs, appointed after the May 1999 elections.

Introduction – provincial policy

The Free State embarked on a process of change and policy development from 1994 (Box 4). In 1996 it produced a three-year business plan summarised in Annexe 1. Within each of the policy areas below, the Free State Department of Agriculture's response is also noted, and summarised in Annexe 2. This policy development and institutional change process was facilitated by the Rural Strategy Unit (RSU), a policy development and change management organisation, closely linked to the MEC's office.

Box 4 The policy development process of the Free State DoA

The Free State Department went through the following process to develop its policies and strategies:

- Workshops with stakeholders and clients to look at what a Free State Agricultural policy should comprise. Agreement on an approach to self-reliance, integrated and decentralised structure.
- Established Commission of Enquiry into Restructuring of Agriculture.
- Development of lead programmes focusing on new clients to bring the change to the new clients. This involved external stakeholders and clients on Task Teams that steered these programmes.
- An 80/20 policy, whereby 80% of resources and time had to be devoted to new clients.
- Rethinking the budget of the department, and refocusing expenditure on field staff, and RDP-type capital projects, restructuring elements not relevant to a future service operation.
- Reorientation programme with staff, using participatory approaches to get staff familiar with new clients.
- Driving land reform through the agency agreement for the Pilot land Reform Programme
- Restructuring the Bantustan parastatals to focus on rural SMME development, moving out of activities not appropriate for the public sector, such as provision of credit, and running business enterprises.
- Defining the new clients with categories including farmworkers (160,000 households), peri-urban dwellers (260,000 households in informal settlements and mostly ex-farmworkers).
- Development of an economic development plan focusing on these lead programmes for the new clients (Free State Mission for Rural Investment). This identified a target of 80,000 households out of 300,000 to be helped within 3 years.
- Development of a capital fund for the poorest clients (Community Projects Fund) to help them get onto a possible growth curve.
- Development of a 3 year business plan (with CREDO incorporating client-focussed elements) entitled *From Entitlement to Self-Reliance*.
- Development of an Access to Finance programme, to develop credit facilities for small-scale farmers without collateral.
- Development of an Access to Markets programme, to encourage mainstream co-ops to support small-scale farmers.
- Restructuring the Department to strengthen field operations, and create a strategic apex
- Supporting farmworkers through the contracting of an NGO, the Rural Foundation to provide services in Farm productivity (originally one of the

lead programmes where the DoA had no capacity to implement).
- Obtaining R100 million additional non-exchequer resources from the EU to supplement capital funds for poor clients (Community Projects Fund Support Programme, CPFSP).
- Finalising policy for funding procedures for community projects.
- Building partnerships with NGOs, CBOs, private sector, and other departments such as DLA, in steering the CPFSP.
- Promoting integrated development approaches through a rural development summit and cluster
- Testing new approaches for opportunity-led projects in the Free State, using contracted project managers.
- Looking for pilots to outsource farmer support, e.g., to local government, NGOs etc, to widen support capacity for new clients.

This process was successful in reorienting the FSDoA towards "new" clients who are mainly small-scale, resource-poor, developing and emerging farmers, often practising agriculture as one part of their livelihood strategy. Engaging in developing agriculture required the development of a new set of priorities, considerations and skills within the FSDoA towards the development of SARLs. This process has been slowed by the political in fighting in the province and the subsequent disbanding of the Rural Strategy Unit, however the FSDoA is supporting developing agriculture in the province, although implementation has slowed.

Marketing policy

Marketing changes have almost been completed with the closure of all agricultural marketing Boards, overseen by a National Agricultural Marketing Council (NAMC). The assets of the Boards are to be held by Industry Trusts, and used to promote marketing among disadvantaged producers. The Trusts are still to begin full operation. The marketing boards played a big role in the development of large-scale agriculture, a strategy being denied to emerging farmers lacking knowledge of and access to markets.

This market liberalisation has had a beneficial impact on agriculture, removing distortion caused by fixed prices, such as encouraging the production of maize in marginal areas. However, the government

departments and the Trusts have been slow to fill the gap left by the marketing boards by facilitating the access of farmers, particularly smallholders, to market information. The FSDoA recognised the importance of this area (RSU, 1997) and created a lead programme called "Access to Markets". This programme was designed to facilitate the access of small-scale producers to markets, as well as provide market information to commercial producers operating in the liberalised market place. However, owing to the lack of information, capacity and expertise in this area within the FSDoA, it never played the role it was intended to.

A futures exchange, forward contracting and diversification into alternative grain crops are some of the benefits of deregulation. Food prices in South Africa have been remarkably stable since 1994, indicating the success of these policies, along with trade deregulation.

Agriculture and trade policy

With GEAR's emphasis on export-oriented growth, trade policy is seen as crucial to agriculture, and trade has grown rapidly since 1994. The government has recently signed a bilateral trade agreement with the European Union, after this was stalled for some time because of disagreement on terms of agricultural trade. Agricultural trade exceeds R10 billion per annum. Food safety and environmental concerns feature strongly in trade, and will be major drivers in moving agriculture away from excessive use of pesticides and poor environmental practices. Box 5 describes the response of citrus farmers to growing environmental requirements in their major export markets. Mostly, agricultural export industries are self-regulating in this regard, as their markets would otherwise be affected, but the NDA does have a strong capacity in food safety regulation, as well as in export control through the Perishable Products Export Control Board.

Financial services

Financial services are being driven by market-related interest rates, as the state has withdrawn from direct financing of farmers, previously done through the Agricultural Credit Board and the Department of

Box 5 Environmentally-driven technology – IPM in the citrus industry

South African citrus producers have been very successful in responding to increasing environmental requirements in their major markets through the adoption of Integrated Pest Management (IPM) technologies. The export market represents a far more lucrative option than the domestic one, and yearly at least 65% of the citrus crop is exported. IPM in the citrus industry is seen as an important component of maintaining quality so that there is sustained demand on world markets in the face of increasing competition. IPM is the tool used to balance the competing demands of low chemical residue and export standards, which require freedom from insects and insect damage. Traditional markets for South African citrus are the UK and elsewhere in Western Europe: however, these are now felt to be saturated. New markets for South African citrus include the USA and Japan.

The increasing demands from international buyers for pesticide-free fruit is a major driver in the move towards more environmentally appropriate production methods. This is particularly true for what are referred to as the "specially selected markets" of the large UK supermarket chains like Sainsbury's and Tesco. Government regulatory requirements are important motivators for change for markets like the USA, where strict pesticide residue requirements combined with "zero tolerance" phytosanitary conditions are seen as a trade barrier by South African producers. Apart from market requirements, a further driver pushing in the direction of IPM technologies is the growing pest resistance experienced. A minority of farmers are also starting to adopt IPM through a sense of environmental responsibility. Outspan (the former citrus control board) publishes production guidelines for citrus producers which have recently been updated to place a major emphasis on IPM. Other methods of technology transfer are through promoting informal and formal training opportunities, and through advice and extension services.

The question arises, however, as to how the benefits, and costs, from adoption of environmentally-driven technology are shared, and whether methods like IPM have associated social benefits and can play a role in poverty alleviation. The majority of citrus exporters in South Africa are established white commercial farmers, with a number of citrus schemes for black farmers in the former homeland areas. There are indications, however, that the ownership base in the industry is starting to shift, with a few examples of workers becoming shareholders in farms and packhouses, and some land reform projects involving citrus farms. It appears that farm size on its own is no determinant, with both large-scale and smaller

commercial farms using the technology successfully. A more important factor is the willingness to adopt a business approach to farming, as IPM is more management intensive. Thus the farmers who will adapt will be those who are willing to place greater effort in hands-on management and monitoring, as opposed to those who, in the words of an industry insider, "just want to spray and go on holiday". If the environmental and demonstrated economic benefits (10% cost efficiency, according to some studies) of IPM are to be translated into social benefits, then it will be important to assist emerging farmers with appropriate support, training and access to the export markets, and during the transition phase from chemical control to IPM.

Source: Urquhart (1999)

Agriculture. The Land Bank, a government-owned institution, has extended its loans to emerging black farmers as well as to resource-poor producers and processors, although interest rates are high to reflect risk. The Land Bank is seen as a wholesaler in these emerging markets. The availability of credit is a major factor enabling resource-poor participants to enter agriculture, and provided the credit is well managed this can contribute to sustainability. The Free State DoA adopted a comprehensive approach to the provision of finance at market rates. The department parastatal moved out of direct lending, and created a lead programme called "Access to Finance". This programme pursued a guarantee system to encourage commercial banks to lend to small-scale farmers without collateral. A grant system was established for those people/ farmers earning less than R1,500 per month. High interest rates serve as a disincentive, with agriculture growth being dampened along with other sectors of the economy. In the event of drought, high interest rates could cause severe problems in commercial agriculture. High interest rates also depress land prices, which is good for sustainability, as land prices come to reflect production value only, rather than being inflated by speculation.

Extension services

Extension services are provided by both government and private sector organisations. In the private sector, extension is either a consultancy service, or is provided by a co-operative or input supplier as part of a

sales serve. See Box 15 in section 4 for a description of the arrangements for extension services in the sugar sector. Government extension services are free, and usually directed towards resource-poor producers. Although government spends nearly R500 million per annum on support services, a high percentage of agricultural gross product by developing country standards, the return on this expenditure is low, because services are poorly organised with too high expenditure on salaries relative to equipment. Thus policy supports the formation of partnerships with the private sector and other providers, to ensure a more productive use of support services resources. A pilot programme is due to be launched in late 1998, with different models being tested, including alternative service providers, such as universities, co-operatives and commodity organisations.

Box 6 Rural Animation Officers (RAOs)

The Rural Animation Officer (RAO) initiative was introduced in the Free State as part of transforming the Department of Agriculture and reorienting its services to the new clients (i.e. Peri-urban agriculturalists, land reform beneficiaries and farm workers). It was based on the policy framework of the Reconstruction and Development Programme (RDP), especially the basic principle of participatory, people-centred development, and the Agriculture White Paper, including the new definitions of a farmer, sustainable agriculture, and agricultural technology, research extension and training. 90 RAOs were to be appointed, one in each of the rural towns of the Free State to facilitate a link between the clients and the Department, as well as other relevant Departments, and resource and service providers. RAOs "animate" communities, generating enthusiasm and capacity for sustainable development especially through natural resource utilisation through joint learning. Their main function was to assist in group formation as well as to feed client information to assist with the transformation of the department towards serving the new clientele. RAOs were to be chosen from the many community organisers from the struggle years having a minimum standard eight qualification; and were to work alongside the extension officers. RAOs are accountable to both the Department and the communities, and were intended to eventually reside in municipal or local government structures. RAOs form part of the Department's client support service team (with research and training) for sustainable agricultural development of the Free State.

Source: Carnegie and Louw, (1996)

Within the context of uncertainty between national and provincial roles, a clearly important functional area for the provinces is extension support. The Free State Province developed an innovative approach to farmer support after 1994, and its models of farmer support are still a useful guide for moves towards sustainability through farmer first policies. All staff underwent training in participatory extension methods, as well as project management and team approaches. Box 6 describes one aspect of this approach, the Rural Animation Officer (RAO) initiative.

The initiative served to highlight the situation of resource-poor farmers, introduce the Department to participatory extension approaches, and shift the focus of the FSDoA away from the centre to the clients. However the concept was too radical for the department to adopt and efficiently use towards transforming its services and improving delivery.

While the state has traditionally provided extension support to agriculture, for some years now there has been a move towards private sector provision of these services. Box 7 discusses the move in the sugar sector towards private sector extension services, which target both small-scale and large commercial farmers, and are accompanied by a specific organisational structure.

Sugar cane outgrowers' schemes have not been without teething problems and do have detractors, who note a number of provisos. These include failure to provide more than a supplementary income, intervention by agribusiness in the farm budget, and the fact that extension systems implemented by the sugar milling companies tend to be almost entirely product driven (McIntosh and Vaughan, 1996).

Nevertheless, this case study highlights the significant role that can be played by the private sector in setting in place institutional arrangements that encourage full participation of all producers, whether large- or small-scale, and that provide for more equitable access to entitlements where land tenure is uncertain. Additionally, it

demonstrates the role commercial farming can play in the move towards sustainable agriculture – a process largely in the hands of NGOs and fringe groups in South Africa.

Box 7 Sugar cane outgrower schemes

Every year, about 2.3 million tons of sugar is milled in South Africa, out of some 21 million tons of sugar cane grown by about 2,000 larger-scale farmers and approximately 56,000 registered smaller-scale growers. Innovative outgrower schemes, instituted and financed by the sugar industry, granted loans to more than 33,000 small-scale farmers, unable to raise development capital from other financial institutions because of their land tenure system. SASEX, the Sugar Association's Experimental Station, has developed training programmes directed at the specific cane husbandry needs of small-scale growers. SASEX, together with two provincial departments of agriculture, also provides an extension and cane husbandry service to smaller-scale growing communities who are unable to afford the more sophisticated SASEX extension service. The Small Grower Development Trust, established in 1992 with industry and donor funds, provides institutional training for small-scale growers. Small-scale sugar cane production is currently generating nearly R500 million per year for small-scale farming communities. Independent researchers have highlighted the valuable contribution of sugar cane outgrowers' schemes, which sustain a range of economic activities, to Local Economic Development.

Organisational structure in the sugar industry is also worth noting. All cane growers, large and small, are members of the SA Cane Growers Association through 43 member organisations. In each of the 16 mill areas, all member organisations are represented by a Local Grower Council, which comprises equal representation from large- and small-scale growing sectors. These structures enable growers to highlight their real needs, and thus targeted training programmes can be developed. The sugar industry has been criticised by environmentalists for its unsustainable practices. An Environmental Management Plan incorporating 14 Local Environment Committees has recently been put in place to promote environmentally-friendly cane farming practices. Particularly as they have reached so many households, sugar cane outgrowers' schemes provide valuable lessons for future initiatives.

Controls on farm size

Repeal of the Subdivision of Agricultural Land Act (Act 70 of 1970) means that large holdings can be further sub-divided to accommodate more users than before. The intention is to retain some protection for high potential agricultural land through zoning. The Subdivision Act played an important role in creating large farms, which were considered to be better for resource conservation. Research done since 1994 has convinced government that resource conservation is not dependent on large farm units. Box 8 introduces the implications of the subdivision of Agricultural Land Act for land reform units. It shows the difficulties in subdividing land (not least because of the problems of water division), although offers the potential of providing many emerging farmers with small plots of land.

Box 8 Fifteen livestock units pilot project

Extensive individual small farming units capable of carrying at least fifteen livestock units were conceptualised in reaction to current thinking that land reform only took place by groups forming legal entities to access land.

The farm Weltevrede of 2,706 ha in Qwaqwa in the Eastern Free State was identified for this pilot project. Government owns the farm and it is managed by Agri-Eco, a parastatal attached to the Department of Agriculture.

Fifteen farms were to be created after subdivision of Weltevrede. The previous farmworkers employed by Agri-Eco as part of the restructuring process to deliver a new service to farmers, were given the first option to select a farm while the remaining five farms will go to interested individuals. To select these farmers, a selection panel consisting of representatives from the Department of Agriculture, Department of Land Affairs, the Rural Strategy Unit, Rural Councils, Chiefs Council and the ANC Land Desk was formed. Two hundred and fifty potential farmers registered to buy the fifteen available farms. The following selection criteria were accepted by the above role-players:

- must have a history of connection to a farm or land in the area;
- must qualify for a Settlement and Land Acquisition grant of R15,000;
- must have previous experience in, and knowledge of, agriculture or farming;
- must be enthusiastic with a vision;

- must be married to encourage the household situation although single males and females with dependants will be considered;
- a family labour force must be available, i.e., the number of dependants;
- must have a capital asset base to start working immediately;
- must be ready to apply for additional finance as required; and
- in the event of two applicants being equal to the above, the poorest will be the priority.

At a meeting, the farmers were asked to group themselves according to their interests: crop farming, crop and stock farming and stock farming only. The latter group was informed that they would go on in the selection process although this was not the final selection. Some applicants apparently did not receive their invitations and another meeting was planned where they would be informed about the process.

By January 1998, only the retrenched farm workers of Agri-Eco were working on the Weltevrede. They lived rent-free in the Agri-Eco houses and used farming equipment that they bought from Agri-Eco with their retrenchment packages. Instead of dividing the farm into smaller units, they were sharecropping the established luceme crops that were established by Agri-Eco.

The reason for not continuing with the subdivision was the lack of water. There were five boreholes on the farm, and they were in close proximity to each other. Water would also have to be taken with pipelines to other parts of the farm to provide all the farming units with water. Piped water is available from the local authority but it is too expensive to use for farming. The solution could be to build dams to collect and store water.

Drought relief and disaster management

Drought relief policy has changed, limiting government assistance to a small subsidy for insurance to encourage a large pool of insurers. The policy regards drought as a normal phenomenon that farmers must plan for, using diversification and early warning systems as a basis for planning for droughts. The implementation of such a policy is likely to force farmers to move away from planting crops in marginal areas, and

ensure that better long-term farming practices become the norm. The Ministry of Constitutional Development and Provincial Affairs released a Green Paper on Disaster Management in February 1998, which will make provision for all disasters, which might include famine relief. There are currently investigations into fraud and misuse of drought assistance in the 80s and early 90s, which simply adds to the argument against blanket state assistance for drought relief. Farmers in resource-poor areas have never received financial aid as drought relief, and will be unaffected by these changes. The Free State DoA developed a drought risk warning service, which prided itself on expert information regarding the El Niño phenomenon in the 1997/98 seasons.

Agricultural research

Another change that will transform the development of new agricultural technologies is restructuring of the Agricultural Research Council (ARC), which receives some R300 million per annum as a Parliamentary Grant. The ARC has served commercial agriculture reasonably well, although many of its technology solutions have been based around high inputs. However, the ARC is now being restructured to meet the needs of emerging and resource-poor producers. Box 9 describes a project to improve wool production among resource-poor farmers, in which the ARC is playing a role. Together with a greater emphasis on indigenous knowledge and more environmentally sensitive technology, this can make a substantial contribution to sustainable agriculture.

Box 9 Communal wool production

In the Eastern Cape Province, a project to improve wool production among resource-poor producers in the Transkei is achieving good results. The participants in the project include the local farmers' organisations, government and the National Wool Growers Association. Researchers from Universities and the ARC are looking at longer-term ways of improving pasture and veld management. The project starting point is to provide infrastructure and train farmers in sorting wool, and provides channels for marketing, thus boosting the value of wool produced four-fold. Grazing management and resource conservation are also important elements. The project will also include other production elements such as arable farming in coming years.

The main state role player in the development of new crops and use of indigenous knowledge is the ARC, although regulation through the Plant and Seed Control Act is significant. Most seed production relies on the private sector, organised through the SA Seed Producers organisation (SANSOR). There are some concerns about the role of genetic manipulation in seed production, whether consumers are properly informed about the use of biotechnology in agriculture, and whether indigenous seed collections can remain viable in the face of increased commercialisation in rural areas. South Africa possesses a significant gene bank of local seeds, but whether commercial production is viable remains questionable. New crop development, such as hemp, will be driven by commercial considerations, with state policy giving political support, as well as some financial assistance in getting a new industry established. Box 10 provides additional detail on the role of the ARC, as well as the private sector, in the development of this new crop.

Box 10 Developing new crops through research and development

Mostly driven by private interest, new agricultural crops are being developed that promise to improve sustainability of agriculture. One such potential industry is hemp. Cannabis is widely grown in South Africa, and with the interest in Europe and elsewhere in hemp as an environmental product, it is thought that it can play a valuable role as an agricultural crop. The ARC, in partnership with the SA Hemp Consortium, which counts among its members forest product companies, has done some initial research. At least five years of research will be needed to develop an economically viable hemp cultivar that meets EU standards of low THC. The biggest obstacle to this development is the Health Ministry, which controls cannabis production. Alleging that hemp may be used as a cover for growing marijuana, the Ministry has delayed the establishment of a *technical working group by six months, and continues to prove obstructive.* Funding for the project is also not forthcoming from government sources, showing a lack of foresight on the project. There are some legitimate concerns: that hemp production will benefit large farmers rather than small-scale growers, and that hemp will pollute the narcotic strains of cannabis, thus damaging the illegal but lucrative industry.

Some of the other new crops under investigation include plant-based food colourants and other natural dyes, herbs, essential oils and natural plants with pharmaceutical properties.

Identification of alternate crops or use of traditional varieties holds promise for diversification of the existing crop production base. Traditional crops are under-studied, and in the case of smallholder agriculture can contribute significantly to sustainability of livelihoods.

Provincial strategies for research and development have involved institutional change, as well as a change in orientation. The FSDoA established a Farming Systems Research and Extension (FSR-E) system out of the previous research set-up in the province. The system consists of three units decentralised to the three regions and co-ordinated from head office. The unit is tasked with the development of appropriate technologies for the 'new' clientele of the DoA, through participatory action research together with extension in the field and drawing on the basic research of the ARC. While this strategy was theoretically sound, due to resistance to change on the part of research officials, combined with the lack of new skills in FSR-E, the system has yielded poor results.

Restructuring of state assets and parastatals

In the former Homelands, government invested in agriculture through agricultural parastatal service organisations, and through running commercial farms that were intended to be transferred over time. It is now government policy to hand these assets over to local co-operatives of former workers, or to create small farming units. In some provinces, parastatals have been shut down because of mismanagement, but in others the role of parastatals as support services to emerging farmers, as well as in managing state projects, is still being maintained. The government policy on this is to create a diversity of service suppliers, and to evaluate the role of parastatals on a case by case basis. The Free State parastatal Agri-Eco was transformed from two former homeland parastatals. It moved out of direct lending and shed inappropriate businesses and functions. It refocused on entrepreneurial development, targeting 25,000 jobs in 5 years. It reduced its staff from 855 staff in 1995 to around 100 in 1998. This was proving to be a positive force in supplementing the work of the FSDoA, however the political infighting in the province resulted in the liquidation of the parastatal, which was then reversed rendering the organisation practically ineffectual.

Natural resource conservation

The Department of Agriculture has lagged behind Water Affairs and Forestry in developing a national programme based on resource conservation. Currently, in both policy and programmes, it appears that the government is seeing the LandCare initiative as the major strategy to achieve resource conservation goals. The LandCare initiative, modelled on the Australian concept, will focus primarily on soil erosion, invasion by alien weeds and overgrazing. The basis of LandCare is to encourage farmers and other land users to take more responsibility for land management, through identifying, researching and possibly solving their own land degradation and conservation problems. The LandCare project will be operationalised through envisaged LandCare committees. The State will only support farmers and other users when problems are beyond their ability to respond. The formal launch of the project was in 1998, first through a number of provincial-level awareness workshops, and later an action plan.

The LandCare project will have to co-ordinate with other initiatives such as the Catchment Management and Working for Water programmes of the Department of Water Affairs and Forestry (DWAF), and the launch of action programmes in terms of the Convention to Combat Desertification (CCD). Current provincial government soil conservation programmes will become part of the LandCare initiative. Aspects regulating the use of land for agricultural purposes, currently contained in the Conservation of Agricultural Resources Act, will continue. The Free State DoA has adopted the LandCare approach and is forming catchment committees. Concerns have been expressed by civil society groupings around the job creation emphasis of the LandCare programme. While unemployment is clearly a critical problem in South Africa, it does not bode well for ongoing sustainability when resource conservation is only promoted through short-term job creation programmes, as once the intervention and short-term funding disappears, what incentive will there be for people to protect resources? Short-term approaches need to be accompanied by more long-term educational processes, to address this shortcoming. At the moment, it appears that awareness raising around the issues that LandCare is trying to address is not receiving sufficient attention.

4.5 Water policy

Significant changes have been made to water policy. A White Paper on Water was released in April 1997. The following main areas within the current water policy will impact on the agricultural sector:

- Current water policy states that there are only two areas that will have guaranteed water rights – water to meet basic daily needs, and water to ensure ecological functioning, which is termed the environmental reserve. As 50% of the country's water is presently used for irrigation, this will have far-ranging implications for agriculture, as discussed below, and can be expected to promote ecological sustainability in the future.

- The National Water Policy will be operationalised through major changes to current water law. These include, inter-alia, the changing of provisions of the current law that make private and riparian rights possible, to that of 'conditional rights' to water based on beneficial use. This will entail the declaration of all water rights presently, and the reissuing of licenses that will grant use rights for a certain period.

- The second area of importance concerns water allocated for irrigation, which has generally been provided at a subsidised rate to farmers. Both the Departments of Water Affairs and Forestry and of Agriculture are embarking on a new irrigation policy. An important aspect of that policy would be pricing of water so that it reflects true cost. Previously disadvantaged users will be prioritised in terms of this policy, and will receive water at lower costs than commercial farmers.

- Over the last two years the DWAF has launched an extensive programme on removal of alien vegetation and piloting of water conservation under the Working for Water Programme. Bush clearance initiatives are targeted at catchment areas. The removal of aliens will improve stream flow choked by the presence of the trees. While Working for Water has had a positive ecological impact, and increased water flow in the catchments equates with significant cost

savings (as it at the very least delays expensive dam construction), the pressure for rapid delivery, coupled with the short-term nature of public budgeting cycles, has resulted in some cases in arbitrary and ill-advised interventions in order to "spend the money".

- The DWAF is keen to implement new institutional mechanisms for natural resource management and is developing ideas on the establishment of Catchment Based Authorities to oversee Integrated Catchment Management programmes. This will imply creation of new institutions and necessitate more comprehensive land-use management. Box 11 provides a brief case study of how this is being implemented in the Ntshongweni catchment. It is also envisaged that such Catchment Management Authorities will administer pollution charges or other environmentally related charges.

Institutional arrangements and participatory methods employed by the NCMP represent models, for adaptation to local conditions, of ways to begin achieving better dialogue between the divided worlds of South African agriculture. The NCMP also represents a partnership between government and civil society facilitated by recent Integrated Catchment Management policy developments of the DWAF. There is thus policy support for this particular approach. The participation of a committed and dynamic project leader who is able to inspire and motivate co-workers and surrounding people is a key non-policy success factor, evident in a number of case studies.

The new Water Act also provides for measures to ensure water saving, which could become an important issue in sustainable agriculture, with the adoption of technologies for water collection and saving, as practised in permaculture and other methodologies. Public works programmes could include construction of small farm dams in resource-poor areas, as well as domestic water collection.

These policy instruments within the water sector are designed to ensure that water is used sparingly, and that natural resource management takes into account the needs and impacts of all user groups. New pricing

Box 11 Ecological farming and participatory catchment management

The Ntshongweni Catchment Management Programme (NCMP), an initiative of the university-linked Farmer Support Group, is working with a diverse range of people who live in the Mlazi River catchment in KwaZulu-Natal. Smallholder farmers, craftswomen, commercial farmers, conservationists, foresters, industrialists and urban residents have responded with remarkable enthusiasm to the call to care for the Mlazi River. The innovative approach taken is to build "platforms" where people can sit together and negotiate how resources should be used. This means that people have the opportunity to understand how other groups use resources and the constraints faced by them. Thus commonalities rather than differences are emphasised, as a step towards redressing the fragmentation institutionalised by the apartheid system. Once people have formed a common understanding of the broader reality, collective action around access to and management of resources can be negotiated. A range of activities, including developing community gardens, forming the EZakhiweni Farmers Association, and the work of several school Environmental Action Clubs has been carried out during the Pilot Phase (1994-1996). Second and third phases should result in the formation of a Catchment Management Authority for devolved decision making, in line with the new Water Act developed by the Department of Water Affairs and Forestry (DWAF). It is hoped that such a body would work closely with the emerging LandCare Programme of the Department of Agriculture, and with conservancy movements. A catchment newsletter links residents and a quarterly "State of the Mlazi" report will be produced from 1998.

Cutting across ethnic and sectoral divides as it does, the NCMP is a practical example of how ecological methods and community participation can heal the wounds of apartheid, not least of which is the divided nature of agriculture in the country. The NCMP is funded by the Water Resource Commission, and thus represents a partnership between a university-linked group and a national government department (DWAF) which is proving to be effective.

Source: Raymond Auerbach, personal communication

policy in the irrigation sector will encourage farmers to apply more efficient technologies, and may influence shifts in agricultural production. Some of these shifts will be towards higher value crops, and, together with other policy changes and incentive schemes, may promote more sustainable agricultural practices.

4.6 Forestry policy

The National Forestry Policy, which was formulated in 1995, has now been translated into a National Forestry Action Plan (NFAP). The NFAP has 3 main legs: community forestry, commercial forestry and conservation forestry. Agroforestry will be promoted through the community forestry section of the NFAP, as well as by agriculture departments. There is some encouraging agroforestry work in the forestry industry, for example using cash crops like sweet potatoes in young tree plantations, but it is relatively unresearched in South Africa, where the horticulture and forestry industry tends to prefer mono-cropping.

There is recognition that agroforestry will contribute to sustainable agricultural methods, especially in smallholder agriculture, but the capacity to implement is limited. Other encouraging initiatives in the forestry sector include the return of government managed plantations to community ownership in former homeland areas, and the Greening South Africa initiative, largely driven by NGOs, to get trees planted at schools, and in communities

Box 12 Sustainability practices in forestry

The forestry sector in SA is controversial, because it is a plantation industry created by converting natural grassland to timber production. Some consider this to be an unsustainable practice, while the industry itself regards it as sound land use. Forests can only be planted under a permit system that calculates surplus water in a catchment and regulates the amount of tree planting to a percentage of the land that will use less than that surplus. In dry years, forestry has a noticeable effect on stream flow. Forestry has also attempted to improve catchment management through better environmental practice, for example planting trees away from riverbanks and headwaters, and protecting wetlands. Forestry also causes unintended damage to streams by seed pollution, especially from wattle invaders. This is the basis of the Working for Water programme, a public works programme founded by the Department of Water Affairs and Forestry to improve catchment management while creating labour intensive employment. Trees are cleared from riverbanks, and in a number of cases used for charcoal manufacture, and the income is used to partially offset the costs of the programme. One of the practices associated with the programme is the poisoning of tree stumps, which is a necessary but

undesirable practice. The ARC is doing research to use biological control in place of the chemical method.

In some areas, forestry companies allow neighbouring communities to utilise land for annual agricultural crops, especially legumes. This form of intercropping allows communities to access land that would otherwise be unavailable, while the company benefits from outsourcing weed control that would otherwise be done using chemicals. The forestry industry, like the citrus sector, has responded strongly to demands from the international market for more environmentally sustainable operation and production, with most of the major forestry companies now members of the International Forestry Stewardship Council.

Forestry companies are now showing interest in investigating the potential of annual crops like hemp and kenaf (a bast fibre crop used in pulp and board manufacture), as the available area for producing wood in the country is limited. One potential use of annual fibre crops is on newly planted land or between ratoon crops (this is the crop that regrows when gum trees or sugar cane are harvested). Tree production on community land or by saw-millers is also being envisaged. One of the large companies, SAPPI, has a successful smallholder programme in KwaZulu, while some community forestry is being promoted in the Eastern Cape, which is the only area available for significant expansion of forestry. However, in this area forestry is bedevilled by problems of fire control and cattle damaging young trees, and many of the questions of community ownership are yet to be resolved.

The government has been managing forests in the former homelands as state forests. It is now in the process of restructuring these assets, along with the sale of SAFCOL, the state Forestry Company, selling them off to either large sawmills or forestry companies, or in the case of smaller or more scattered plantations, looking for local partnerships or operators from communities. A small-scale saw-milling industry has developed over the years in the Transkei, which results in many downstream jobs. The challenge is to maintain this industry while ensuring sufficient new investment for the long-term viability of the industry.

Small community woodlots are already being transferred to communities. At the Zocava project, Irish Aid is assisting a local community to manage woodlots. A business plan has been drawn up showing how the community can run the woodlot as a viable project, and the community is taking over the management of the forest and the sale of forest products.

The restructuring of state forests into locally controlled community organisations provides significant opportunity for developing local, participatory forest management practices.

4.7 Land reform policy

A White Paper on South African Land Policy was released in April 1997. The policy has three main aspects – tenure reform, redistribution and restitution (see below). Both restitution and redistribution involve settlement of people on newly acquired land, or land returned through the restitution process. The reform is based on a land acquisition grant (now R16,000 per household), with land being acquired on a willing seller basis, except in the case of restitution. The settlement grant may also be used in tenure reform. Should land reform reach the targeted 30% transfer of land into new ownership – albeit over a longer time period – this will have a significant impact on sustainable agricultural practice.

Studies prepared as part of the policy process showed that land was needed most for settlement purposes, with less demand for agricultural utilisation of land. Indeed, one of the difficulties of the land reform programme is achieving a balance between the need for land for settlement, and the creation of livelihoods through agricultural production. Often, settlement needs have been prioritised over needs for production, meaning that land reform has probably contributed little to economic growth. An encouraging trend is that some land-owners are beginning to make land available to employees at their own cost – without the involvement of government. In the best known case, Nelson's Winery made land available for labourers to grow their own vines and make their own wine. This winery, Klein Begin, shows what can be achieved through land reform, even without the subsidy provided by government. In share equity schemes, workers use the land acquisition grant to buy into existing farming operations – see Box 16 on the Whitehall Farms scheme.

Some argue that future stability of the rural areas is dependent on the success of land reform, as without addressing the dispossession of land

under colonisation and apartheid, rural areas will remain unstable. The converse is also true – unless commercial agriculture actively supports land reform, its unlikely that there will be much progress with sustainable agriculture, as many producers begin without capital or skills for farming. Government support services are weak and do not provide for the needs of new producers.

While the Department of Land Affairs (DLA) is committed to ensuring that environmental considerations are taken into account in the land reform settlement programme, technical or management capacity to plan each project is a constraint. The model of settlement envisaged, with large groups of people settling on agricultural land without infrastructure, gives cause for concern in terms of future degradation. There is obvious tension between the political imperative to be seen to be active on land reform, and the way this may work against more sustainable agricultural systems being developed. Failure to address this will also reinforce the negative attitudes of those opposed to land reform, that poor people living on the land cause degradation. A technical support programme, to develop a methodology for environmental planning and monitoring for land reform is being implemented at present, and is supported by the Danish aid agency DANCED. This technical support is aimed at creating institutional capacity.

Another significant change resulting from land reform is tenure reform. Changes to tenure which grant communal ownership and recognise this as an important aspect of South Africa's varied tenure system are likely to stabilise farming practice in communal areas, and provide a much better incentive base for such farming to thrive. The establishment of communal tenure is further reinforced through the Communal Property Associations (CPA) Act. However, existing experience shows that CPAs work best where there are few members – often not larger than 500 or so. The consolidation of tenure security will also go a long way towards ensuring access to other development assistance, such as finance, which can be used to improve farming practices and potentially increase the diversity of income sources. At present access to agricultural credit is being reformulated at the policy level. Commercial banks are reluctant

to expand in areas where subsistence or smallholder farming is prevalent, due to the lack of surety around the repayment of loans.

Tenure security for farm dwellers is promoted through the Extension of Security of Tenure Act (ESTA), which grants rural dwellers rights to remain on land owned by others. Most stakeholders welcome the Act, but are concerned that some of the provisions regarding alternative accommodation are too difficult to meet. The period leading up to the drafting of the act coincided with a decrease in farm employment of some 30%, together with increased evictions, highlighting a perverse effect of this policy, together with improved labour legislation. While the intentions behind the drafting of ESTA were undeniably good and aimed at protecting the poor, a further long-term effect that has not been thought through clearly is the fact that if successive generations of farm labourers are also provided with land with secure tenure on the farm, and this is not also used for productive purposes, the amount of agricultural land will steadily decrease. Alternatively, if this is not granted to future farmworkers, this could lead to social differentiation between successive generations of workers, as has been experienced in Bolivia since the 1953 land reform, where differing degrees of land tenure and access to land are correlated with differences in incomes and livelihoods.

The Land Reform Programme

Restitution

This programme is designed to return land to communities who were forcibly dispossessed after 1913. A judicial process is being followed. Addressing the worst wrongs of South African history would enhance political and social sustainability, and the restitution process has clearly given a voice to many communities forcibly dispossessed. Those communities, such as Riemvasmaak and Smidthsdrift in the Northern Cape, who have had land returned, have been satisfied in one sense; however, it has raised so many other issues such as township development and livelihood creation, that much tension has been introduced into the communities and the process towards normalisation is taking a long time.

The restitution process is associated with many frustrations. Progress with restitution of land has been very slow, because of difficulties with the conception of the process, which regards the Commission as the adjudicator, and the Department of Land Affairs as the plaintiff. This means that each case is prepared twice over. Changes are now proposed that will make the process more streamlined. The Commission has also been swamped with applications, and this has absorbed all its capacity.

Redistribution

The overall aim with land redistribution and tenure reform is to create greater security of tenure and access to land through legislative and administrative mechanisms. The tenure reform legislation is expected to have profound impacts on the rural economy over the next 20 years. It will increase the security of tenure of rural residents, which should lead to greater stability. In areas of common property, the legislation is designed to give producers the opportunity to operate their land within the context of secure tenure, which should stimulate investment. A new Land Rights Bill will enable people to express their land rights without necessarily having rights of private property. This will mean that land rights will have to be shared and negotiated, rather than being held only by the owner of the land in the case of private property. It is likely to result in a greater separation between residential occupation and productive use of farmland over time, as landowners and residential occupants see a benefit to separating their interests. Already, the laws enable labour tenants to use land redistribution grants to acquire a portion of the farm they occupy with the landowner. In the short term, tenure legislation, combined with labour legislation applied to farm workers, has had a negative impact, with a sharp decline in employment on farms, especially permanent employment.

More progress to date has been made with Land Redistribution. Until 1998, about one million hectares of land had been distributed. Although this is far short of the target originally set in the RDP document, it is an impressive achievement. In the Free State Province, for example, 109 projects have been completed. Many of these involve small groups of people who come together to purchase a farm from a white owner. In

some cases, projects are formed by farm-workers who acquire an adjoining farm. Some of the projects involve making land available for commonage, while others involve the transfer of state land to new owners. In general, the smaller projects are easier to manage; in the case of larger projects, internal dissent may limit the effectiveness of a project. For example, Kutlwanong, a project formed by 200 beneficiaries to acquire a large farm adjoining an urban settlement, got off to good start in its first year, but internal dissent caused difficulties in the second year, and land remained unplanted (Box 13).

Box 13 The Kutlwanong Farmers Trust

The Kutlwanong Farmers Trust (KFT) in the northern region of the Free State province is an early example of the implementation of the land redistribution policy. This was the second land reform project in the Free State, and is therefore of high political priority to 'succeed'. A farm of 3930 ha was transferred from a white commercial farmer to 200 participating member families in November 1996. It was bought from a prominent Free State farmer who owned a number of other farms. As this farm borders the poor township of Kutlwanong, the high levels of theft and vandalism made it very difficult for the owner to farm it at a profit, and he was happy to sell. The farm is legally held in trust by the KFT on behalf of the families.

The KFT members divided themselves into different production activity groups including poultry, crops, livestock, vegetables and handicrafts. The number of people in each group varied depending on interest. The different groups began with agricultural activities, which were to a greater and lesser extent successful. A number of issues arose:

- Conflict within the KFT developed as a result of:
  - differing access to the farm's resources among the groups
  - dominance by men and more educated members
  - inequitable distribution of profits
- The difference between ownership of the land and the production/business of farming was not clarified from the outset
- Most of the KFT members are illiterate and know little about farming
- Only some of the 200 members were interested in active farming.
- Economically the farm cannot support 200 households
- The service providers were actually farming on the KFT land and using the KFT members as labour.

By itself, land acquisition does not constitute a livelihood. This highlights the crucial role to be played by the support services in promoting and supporting equitable and robust user-groups and in re-training de-skilled farmers in appropriate farming techniques. However, the support services themselves need to move away from a purely technical approach to farming and increase their understanding and promotion of social development issues. Whilst the new policies place strong emphasis on people's empowerment, sustainable livelihoods and equitable rural development, this is very difficult to implement. Factors that went wrong with the policies that looked so good on paper include:

Kutlwanong farmer in field with first year's maize crop

- the political pressure for rapid results, not allowing enough time for institutional transformation
- the strong disciplinary approach of, and poor co-ordination among, government departments.
- the perception by many in government of agriculture still as a large-scale, high-tech activity, rather than a means for rural development; and
- the poor commitment by the private sector to the aims of the land redistribution and the new role for agriculture.

For land reform and agrarian change to achieve their stated objectives, the drivers of the process (notably the policy makers and their implementing organisations) need to become more aware of the elements contributing to SARLs. Support is needed to create communities which are able to adapt and adjust to the continuous changes and dynamic nature of both their internal and external environments.

Adapted from Carnegie et al, (1998)

In Kwazulu Natal, 99 projects are registered, involving 44,000 beneficiary families. Many of the projects deal with landless communities removed from white-owned farms, labour tenants and tribal people occupying land which is in the traditional land of another tribe. Land reform is complex because tribal leaders, who have the political support of the provincial Inkatha Freedom Party, want to control all land, while it is the policy of government to transfer land directly to beneficiaries. Unfortunately, complex negotiations around such issues slow land reform down. In turn this leads to land invasions and those intended to benefit find themselves in conflict with others in communities. Much of the demand for land is for a place to stay or for cattle grazing, so the contribution of land reform to economic growth in these situations is relatively small. For economic development, much further investment in production is needed, and this needs active support of financial institutions and support services, which are slow to respond to the demands of beneficiaries. These problems of land reform are highlighted in a quality of life survey done by the Departmental Monitoring and Evaluation Directorate, and add weight to the argument that for land reform to be successful, support of many different parts of government is needed. It also leads to an argument that land reform might need to be more targeted at where adequate support services are available, to generate a greater likelihood of success and economic development, which is crucial to sustainability.

Many beneficiaries of land reform in the Free State are illiterate, unemployed, poor people from the townships and peri-urban areas who enter the process as a means to develop a sustainable livelihood. This process is not merely about the transfer of land, but involves many other issues as shown in Box 14.

Employment creation and land reform

Employment creation directly relates to the question whether development projects (or land reform projects) lead to the gain or loss of livelihoods. This is not an easy question to answer because it may still be too early in the land reform process to establish this trend, but it is of concern that in the larger projects, more than half of the participants remain unemployed, either on the project or off-farm.

Box 14 Land reform beneficiaries' views

Land reform beneficiaries were reported not to have a clear understanding of land reform policies. They find themselves confined to smaller markets within their immediate areas of production, and unable to participate in national or international markets. These new farmers embark on production of commodities, which may not be highly desirable on the markets, as a result of lack of up-to-date information and adequate market research. Coupled with the market problem is the lack of suitable equipment for increased yields to meet the market demand in cases where large markets exist. Those land reform beneficiaries who operate in large groups also expressed a lack of unity amongst the members, and frequent disagreements hamper the progress of the project. Many farmers also showed a lack of understanding of the impact of their agricultural practices on the environment.

Source: Marúmo (1998)

State land redistribution

Another form of land reform is the transfer of large state-owned agricultural enterprises. There are over 120 such enterprises in the country, and they ought to be ideal candidates for land reform. Transferring them to new owners, or restructuring their operations, has proved rather difficult, mostly because of the entrenched interests of different role-players/stakeholders, including present management, workers, and government officials. Most of these projects are subsidised, and management is not as effective as it might be. Because of government budget cuts, projects may do little other than pay salaries. For example, sisal projects in the Northern Province have budgets of up to R4 million, with wages constituting 98% of this and earnings as low as R200,000 (Northern Province Dept of Agriculture, 1998). Despite such huge losses, no attempt has been made at restructuring or closure. In the Eastern Cape, government closed its parastatals in July 1997, despite protests and legal challenges from workers. Only one major project has been transformed, the Magwa Tea Corporation, which is being restructured into a worker-owned co-operative. The Corporation has been under liquidation for a year, and is soon to be transferred to the co-op. The land reform programme has been involved in restructuring the Corporation, and making grants available to workers to purchase the co-op. Even under liquidation, the co-op managed to

trade without subsidy in its first year, after requiring subsidies of R30 million in the previous year. Similar restructuring exercises have not yet come to fruition on other government schemes, where valuable irrigation land lies idle. In the Northern Province, two schemes in the process of restructuring involve the government, a development corporation and the workers trust forming a three-way partnership to run large citrus estates. Another project, which has succeeded in transformation, is Inala Farm, a big fruit farm in Mpumalanga. Having gone into liquidation with a debt of R23 million in 1996, the estate is now run as a worker management partnership, with the land owned by the government. It has greatly improved working and living conditions for its 429 members, with better employment conditions, adult education, a clinic and a bursary scheme for employees' children as one of its features (Inala Farms, 1998).

Box 15 describes some of the difficulties experienced during the transfer, under land reform, of a large government-owned farm in the Free State.

Irrigation schemes in former homelands are a significant agricultural resource. Many of the schemes are poorly designed and run with a minimum of farmer participation, but they represent a major restructuring opportunity. In the Northern Province, government has initiated a review of irrigation schemes, and is now in the process of piloting restructuring on three schemes. The aim of the restructuring is to make the schemes economically viable and controlled by farmers. In the Eastern Cape, government has undertaken to restore the infrastructure on schemes, and irrigation policy allows government to treat past investment in irrigation as a sunk cost, and to examine questions of viability taking account of current expenditure only.

Equity share schemes

There are a number of share equity schemes all over the country, where farmers and workers are finding that combining their efforts makes for better farm productivity, and a more sustainable agriculture sector. In these schemes, farmworkers use their R16,000 land acquisition grant to buy into the existing farming operation, or to start a new one together

Box 15 Diyatalawa Apple Project

Diyatalawa is a farm of 1,898 ha in the Eastern Free State that belongs to the government and is earmarked for land reform.

According to the Water Services Act of 1997, Diyatalawa has the right to flood irrigate 30 hectares or drip irrigate 300 hectares. This created the opportunity to establish 300 emerging farmers on one hectare each to produce export apples. The first phase was to establish 25 farmers. The climate is ideal for apple production and the apples should ripen three to six weeks earlier than any other production area in the Southern Hemisphere. Only high potential land on the north facing slopes was used. Staff and equipment of Agri-Eco prepared the land. Soil conservation tilling methods were used to prevent erosion against the slope. Insecticides and fungicides were applied according to a spraying programme to prevent diseases.

The high-density row method was used to plant the apple trees. This method manipulates the trees into an open shape for easy harvesting and spraying. However, it means that the trees need continuous and daily attention. Six varieties of apple trees were planted, to ensure ripening at different times to ensure economic use of a pack house. A micro irrigation system was installed with a drip at each tree. Water is supplied from a dam and pumped with electrical pumps.

A weather station was erected on the farm to measure temperature and precipitation. This information is used to calculate the potential evapotranspiration, which is again used to calculate the irrigation time and duration. A water bailiff who is employed by the farmers is being trained to do these calculations.

The project has a steering committee consisting of three farmers and four stakeholder representatives who are responsible for broad policy issues, payments, loans, selection and selection criteria of farmers. A legal entity is currently being investigated for the farmers. Some families have accommodation on the farm; others commute from their home villages on a daily basis.

A project manager was appointed to establish the first 25 hectares of apples. Four officials assisted him: a community liaison officer, an orchard manager, a water bailiff, and a technician to plant the trees.

The Department of Agriculture through the Community Projects Fund provided the funds for infrastructure of the major irrigation systems and

training of the farmers to establish the orchard. Agri-Eco was responsible for financial and administrative services, maintenance and control.

The climate advantage results in sixty percent of the crop being targeted for the European market. The rest will be sold on the local market, especially the north of the country like Gauteng and Mpumulanga. A private company, based in the town of Bethlehem, which is about 30 km from the Diyatalawa, will handle marketing.

Difficulties with the project included

Selection criteria: Political agendas overshadowed the efforts to select farmers. It would be better to select farmers who have experience of farming.

Housing: 13 of the 25 farmers had to be transported on a daily basis from their homes to the farm. This meant that work could not start before 09:00 or 10:00 in the morning and by 16:00 the farmers had to leave again.

Organisation: Little has been done in assisting in the development of a representative farmers' organisation which has hampered the progress of the project in terms of the farmers taking responsibility for the development of themselves and the project.

Ownership: The government institutions involved all claimed ownership of the project: the 25 farmers on the other hand showed very little sense of ownership and considered themselves as workers. Their capacity has not been developed to take control of the project themselves and little attention has been given to their social requirements.

Finances: No funds could be accessed from funders except from the FS Department of Agriculture, because no legal entity exists for the farmers and ownership of the land is still with government.

with a commercial farmer. This means that existing farming operations can be re-capitalised while access to land and assets for workers is increased. Box 16 describes one such promising scheme, at Whitehall Farms, where high value deciduous and citrus fruit, as well as grapes, are grown.

From Whitehall and other equity schemes, it is apparent that the underlying fundamentals of an enterprise must be sound – equity sharing cannot bail out a mismanaged farm. Furthermore, where high levels of conflict exist, lengthy initial interventions will be required to

Box 16 Whitehall Farms Equity Sharing Scheme

An innovative and important experiment in equity sharing is underway at Whitehall Farms in the Grabouw area of the Western Cape. At the initiation of management, workers on the farm have purchased fifty per cent equity in the farming operation, using capital borrowed from the Development Bank of Southern Africa, the Independent Development Trust, and a commercial bank. These loans are secured through bonds on the property.

Whitehall's predominant crop is apples, while pears, nectarines, soft citrus and wine grapes are also grown. The natural environment is highly suitable for high-value deciduous fruit and noble white wine cultivars. For some years, Whitehall Farms has been progressive in terms of investment in human capital, and has enjoyed very good labour relations. The farm is also established as an industry leader for productivity, having received many national and regional productivity awards. To some extent, thus, Whitehall Farms is an atypical case study, perhaps providing necessary conditions for an experiment of this type.

Participation in the equity scheme is voluntary and open to all permanent workers. Shares in the Whitehall Workers' Trust are allocated according to a formula based on years of permanent service and current monthly salary. As their contribution to the scheme, participants forgo their annual bonuses. The Whitehall Workers' Trust and the Hall Family Trust each hold half the shares in the Whitehall Landholding Company (which holds the immovable property) and the Whitehall Farming Trust (which owns the movable property). Employees taking part in the scheme thus have an equal share, with the previous sole owners, in profits and capital growth. Each group has the same number of directors and trustees and dispute resolution mechanisms are specified.

The equity scheme was developed in several phases and involved initial building up of trust and reaching agreements 'in principle'. Subsequently, interests of the parties had to be balanced and set into enforceable agreements. Considerable discussion over an extended period and, ultimately, facilitation by external agents took place. Time was required to allow for historically polarised interracial attitudes to approach a middle ground. Another teething problem was the disempowering effect of the culture of dependency fostered among coloured farm-workers over centuries. Many participants found the scheme difficult to understand. These aspects highlight a key lesson – much time and personal

commitment are required to bring about changes in attitude necessary for the scheme to be viable.

Evaluations have suggested that significant increases in productivity might be attributed to the scheme. In addition to increased productivity, economic benefits include the opportunity to recapitalise an existing farming operation. There have also been substantial changes in attitude, commitment and work intensity of workers. Interestingly, despite the fact that the scheme did not arise as a worker initiative, no participants in the evaluation expressed concern about lack of involvement in conceiving the scheme. If key components of human development are accepted to be income levels, education and participation, the equity-sharing scheme at Whitehall Farms succeeds in all these areas. Future shares in capital growth mean that dreams of employees of owning a business or a house may be realised.

Experiments such as Whitehall Farm's equity sharing scheme have the potential to play a role in land reform, as land ownership is effectively redistributed without subdivision into potentially sub-economic units. Additionally, workers are enabled to enter the capital- and technology-intensive deciduous fruit and grape sector. While equity sharing does not provide an instant solution to problems in a farming business, such schemes can lead to greater equity, increased income and empowerment of farm-workers, and thus rural development.

Source: Eckert et al (1996) and J. Hamman, independent legal advisor and facilitator for the Whitehall scheme, personal communication

build understanding before initiation of discussion around a share scheme. In the case of Whitehall, existing labour relations were excellent and yet considerable investment of time was required to build mutual trust. Interestingly, paternalistic farmer/labourer relations provide a suitable environment for an equity share scheme, although schemes with unionised labour have also been undertaken – the issue is whether there is a sound relationship between workers and management.

Overall, the achievements of land reform must be seen as mixed. There are too many projects that are not succeeding in creating livelihoods, while tenure security is only being achieved in some provinces. Land reform needs to focus more strongly on creating successes, if its contribution to sustainability is to be maximised.

4.8 Land use planning and environmental management

Land use planning is a provincial competence and therefore sustainability in this regard will depend on particular circumstances and provincial legislative instruments. However, the release of the new Environmental Impact Assessment (EIA) Regulations in terms of the Environment Conservation Act (Act 73 of 1989) will also influence land-related development. Specifically, change in land use from agricultural to any other land use, and from grazing to any other form of agricultural use, are listed as activities that may have a substantial detrimental effect on the environment, and which now require EIAs. Further relevant identified activities requiring some form of environmental assessment relate to concentration of livestock for mass commercial production, intensive husbandry of weeds or invasive alien species, release of organisms for biological pest control and genetic modification of organisms.

A further recent development in this field is the promulgation of the National Environmental Management Act (NEMA) in 1998. This progressive piece of legislation translates the principles of the 1997 White Paper on Environmental Management Policy into law. A framework piece of legislation, NEMA provides an umbrella for integrating good environmental management into all development activities. It creates a set of environmental principles that must guide the actions of government, which include sustainable use of natural and cultural resources, promoting and facilitating public participation, taking a risk-averse and cautious approach, and environmental equity and justice. According to NEMA, 'sustainable development' means the integration of social, economic and environmental factors into planning, implementation and decision making so as to ensure that development serves present and future generations.

NEMA broadens the concept of locus standii or legal standing introduced in the Constitution, by allowing citizens or the state to take court action to prevent environmental damage in terms of NEMA or any other statute that deals with the protection of the environment or

the use of natural resources. This provides stronger 'teeth' to existing resource conservation statutes. A progressive component of NEMA of relevance for agriculture is the right of workers to refuse work that is harmful to human health or the environment. NEMA also places a 'duty of care' on every person to prevent environmental damage.

4.9 Energy policy

As recognised by the new White Paper on Energy Policy (Department of Mineral and Energy Affairs 1998), "energy is the lifeblood of development". Since 1994, energy policy has moved from a narrow preoccupation with the interests of industry and the white minority, to become increasingly focused on meeting the economic and social needs of all the people. The White Paper indicates a change from a supply-side focus to the needs of energy end-users. Renewable energy and energy efficiency are further policy principles contained in the White Paper.

The foregoing sections have sketched the general agricultural policy context and provided some detail of specific policy principles that will have implications for the spread of more sustainable agricultural practices. The wealth of new policy means that it will be some time before one is able to clearly trace effects back to policy causes. As pointed out, there are many positive indications that, more than ever before, policy is beginning to grapple with the need to move towards sustainability, and the type of institutions, as well as the mode of institutional operation, that can be expected to promote these goals. The following section provides additional information on the means by which policy principles will be translated into action - the organisations and institutions of agriculture.

Farmer Organisations

This section of the report provides further detail on the historical and current institutional context as far as farmer organisation is concerned. People's organisation is one of the central elements that contributes to SARLs (Figure 1). It is through organising themselves that people are able to assist one another through the discussing and sharing of ideas, information and skills. Organisations also provide a base from which to negotiate, lobby and demand entitlements which ultimately result in the development of the organisation and its members.

One of the reasons for the dominance of white, large-scale, commercial agriculture in South Africa has been the strength of its farmer organisations and their ability to lobby government for favourable policies, subsidies, relief, support and resources. Institutionally, commercial agriculture developed a three-tier, inter-linked system, with Co-operatives, Marketing Boards and the national SA Agricultural Union (SAAU) being the key institutions that both lobbied for and managed state assistance. Co-operatives have now become large commercial organisations, many of them converting to companies listed on the stock exchange. The Boards have been closed down, and the SAAU, after a period of reduced influence, is now an important lobbying group in the face of rural problems such as organised crime.

Another example of successful farmer organisation is the South African sugar industry which operates separately of government. The production (as opposed to the milling side) of the industry has a strong farmer influence in setting the research agendas and the provision of extension and other services. Admittedly most of these farmers are powerful people in their own right, but their role has served to maintain the farmers' needs and agenda as the priority of the industry's service organisations.

Black farmers' organisations prior to the formation of NAFU/AFU

Towards the end of the nineteenth century, there were several flourishing black farmers' organisations, particularly in the Eastern Cape, which held shows and meetings, promoted progressive farming ideas and served the interests of their members generally (Odendaal, 1983; in Khan, 1994). Organisations such as the Native Farmers Association (NFA), established in the Eastern Cape in 1918, were political in nature, and primarily concerned with the problem of black access to land, which was recognised to be linked with environmental degradation and poverty, and adopting progressive farming methods (Khan, 1994). The NFA may be seen as one of the first conservation organisations, which adopted a holistic approach to environmental issues, through its understanding that increasing soil erosion in the Ciskei area was linked to deteriorating socio-economic conditions. This was in sharp contrast to the official response at the time, which continued to be based on purely technical considerations, and dealt with through punitive legislation. While organisations such as the NFA made an impact, they were ultimately powerless within the broader context of increasing exclusion of blacks from political decision making.

During the apartheid years, it became increasingly difficult for black farmers' organisations to have any impact on government policy. During this period of South Africa's history, organisational development that did take place was largely restricted to the white commercial farming sector, where great strides were made. The homeland system and associated disruption of the social fabric served to further undermine structures that did remain. Homeland government extension services focussed on the formation of interest groups among farmers. These groups were merely to assist in the dissemination of the services' information, but did not have political, lobbying or negotiating power. In the former self-governing territory of KwaZulu, The KwaZulu National Farmers Union existed, but was more an organ of the homeland government than a representative organisation for farmers.

Today, commercialising black producers are organised in the National African Farmers Union (NAFU) and the African Farmers' Union (AFU) a smaller union mainly in the Western and Northern Cape. NAFU especially is an important lobby group attempting to secure government support for its members, whose needs include access to land and credit. Alliances between the white agricultural sector and NAFU are increasingly common, as their interests are largely similar, and black farmers require either support from the state, which is not able to deliver on the level needed, or from commerce. In both the Eastern Cape and KwaZulu Natal the unions have combined to form new multi-racial unions representing all farmers in the province. The "African Renaissance" being driven by the Mbeki government should focus on the recreation and development of indigenous African institutions and organisations that can effectively represent the majority, assist their members, lobby government, and demand resources and services.

Formation of co-operatives amongst black farmers will be encouraged by government policy, mainly in the form of guidelines on registration and some investment in training. There is no doubt that co-operatives within this community will enhance access to markets and provide entry points for the purchase of farm inputs and sale of agricultural produce. At the same time, co-operation between large commercial co-operatives and emerging farmers will remain important. The removal of subsidies and direct support to co-operatives should encourage some diversification in the rural economy, both with sale of inputs and supply of services, as well as with marketing of produce. This diversity can only add to sustainability.

As regards institutional support, NAFU and other organisations have lobbied for direct government funding; government has not accepted this, but rather support is being granted for capacity building. The government provides little direct support to NGOs, but increasingly supports the outsourcing of services needed by government, which includes farmer support services. Thus NGOs can win contracts from government to provide farmer support services. In 1996/7 the Free State DoA contracted out the farm productivity programme to the Rural

Foundation, an NGO, and began considering the outsourcing of extension.

An embryonic, broad-based, rural civil society movement

In 1998 the Rural Development Initiative (RDI) was started in order to mobilise rural communities and organisations to take their rightful place on the rural development agenda. The RDI is being co-ordinated by five land and rural development NGO networks, including the National Land Committee. At a national conference held in April 1999, a Rural People's Charter was drawn up, which expresses the desires and needs of rural people with respect to a range of different issues: agriculture and food security, the rural environment, rural economic development, water and sanitation, health care, governance and the rights and conditions of farmworkers. The Rural Charter notes that although policies and laws are in place to address rural issues, there has been very little improvement in the lives of the rural poor. The idea behind the RDI was to make an intervention prior to the second democratic elections in May 1999. It remains to be seen whether the RDI will develop into an effective broad-based movement that is perceived to be legitimate, and is able to make an impact through lobbying on government policy and programmes. It may, however, be a useful mechanism to take the ideas of the PTW research further.

Technology

This section focuses on the use of agricultural technology and how this is being harnessed towards achieving sustainable agriculture. The schism between commercial, large-scale agriculture and resource-poor smallholder farming is reflected in the choice of technology of these different worlds. Through the land reform programme, technology transfer to emerging farmers may be beginning to bridge this gap. However, unfortunately in many cases the technologies of capital intensive large-scale farming are being unthinkingly promoted by service providers and uncritically accepted by new farmers. This section explores these issues, which highlight the fact that the emphasis on 'technology' tends to be in the field of technology hardware and techniques, with little recognition of the value-laden nature of this, as well as the critical role of social 'technologies'. Diverse policy elements discussed in section 4 will serve as drivers for adoption of more appropriate technology at different scales. For instance, changes to irrigation pricing policy will encourage farmers to apply the most efficient irrigation technology for their soil and crop types.

Key current technology issues

Key issues for South African agriculture at the moment are the effects of, and extent of, engagement with the global technology revolution; the issue of biotechnology and Genetically Modified Organisms (GMOs), and the recent development of the Futures Market.

Most commercial farmers, as well as many support organisations, have computer hardware and use the internet, which is also an important part of agricultural training and education. However, it is difficult for emerging and resource-poor farmers to harness the beneficial effects of the technology revolution in the absence of computers and with current high levels of illiteracy. The government is at the moment investing in computer-based advisory systems for farmers.

As far as biotechnology and GMOs are concerned, mostly government seems to be in favour of these developments. There is some biotechnology capacity in the research sector in South Africa and work is being done on GMOs. At one stage big companies like Monsanto were investing in their research capacity here as they saw South Africa as an ideal opportunity – good science capacity, weak regulation and not much public concern. However, more recently it appears as though there is greater recognition of the problem. One driver for this is sensitivity about export markets, with exporting farmers becoming quite aware and concerned. An NGO, Biowatch, has recently released a hard-hitting report on the lack of readiness on the part of government to adequately manage the risk presented by unregulated entrance of GMOs into the country. This has been well-publicised and will hopefully play a role in raising the awareness of the public, as well as a broader range of farmers.

The futures market is a way of disposing of grain and other commodities in the absence of price regulation. Over the last five years South Africa has developed a sound futures market, used by farmers and purchasers alike. It applies mostly to maize and oil seeds at present, and also serves to stabilise prices in the region.

A range of approaches

Many organisations supporting agriculture in resource-poor areas are grappling with how to approach sustainable agriculture in existing programmes and methods. NGOs took the lead some years ago in introducing participatory methodologies like Participatory Rural Appraisal (PRA), and these are now quite widely used by practitioners in government and communities. Holistic Resource Management (HRM) and Integrated Catchment Management (ICM) are accepted policy in water resource management. In agriculture, there is a small but significant interest in low external input sustainable agriculture, while Farming Systems Research & Extension is being adopted as a methodology by national and provincial governments, and being applied in a number of projects. Permaculture training takes place regularly in the country. It is estimated that there are 200 active practitioners trained and about 20 active trainers, training small groups

in collaboration with practitioners in Zimbabwe and other countries in the region. For example, the strong grassroots role being played by John Nzira, a former extensionist at the Mpumalanga DEAT (Environmental Education directorate) was noted by several. Zimbabwe-trained Nzira has adopted a permaculture approach and works with schoolchildren and women's groups to transfer these skills and approaches in a hands-on way. The success of his projects is well-known, and could serve as a model for other provincial departments and a possible link for training of agricultural extension officers. As regards learning from the agricultural technology development experience of other African countries, there is scope for improved benefits from the experience in Zimbabwe and elsewhere in Africa. There is a fair amount of training of South Africans through trainers coming from Zimbabwe or elsewhere. The FAO has quite an active exchange programme, but influence is limited to use of techniques like PRA, and not necessarily changing responses to farmer demands.

In resource-poor agriculture, the incidence of rural poverty is still the dominant factor for most rural areas. Much agricultural land lies under-utilised because of a lack of input supplies and support services, including mechanisation. Technologies like the use of animal traction are known and promoted by a few small agencies, but in general are regarded as second-rate technologies. Little research has been done into the effectiveness of animal traction, or on improving and adapting the technology. Animal traction ploughing is mostly done too late in the season because animals are not adequately fed in winter. In high potential soils, acidification of soils limits production. Although technologies are widely used in commercial agriculture to alleviate acidification, the infrastructure does not exist to support farmers. Indeed, government has withdrawn support from some organisations that used to support resource-poor farmers.

There are exciting moves to recognise indigenous knowledge, with ARC and other organisations playing an important role in promoting the use of indigenous knowledge and building systems for its integration into science. However, there is much that still needs to be done to enhance the scope, and even further develop local and indigenous knowledge

bases to maximise use of existing resources. It would seem that traditional technology is often looked down upon, not only by researchers, but traditional farmers themselves. In other areas, traditional technology is being actively studied and promoted, like the Council for Scientific and Industrial Research (CSIR) traditional technology survey in the Northern Province. The issue of technology application is dominated by the need to save on labour time, and not incur additional cost to households that earn below subsistence incomes. It is not always correct to assume that African households prefer labour-intensive technology; in fact the opposite is true in some areas where women head most households. This highlights once again the need for creative approaches to combine what is most appropriate from indigenous and 'scientific' technologies for specific farming contexts.

In production terms, small-scale or emerging farmers, in the livestock, crop and horticulture sectors, are becoming more active participants in agriculture. Some 600 black livestock farmers participate in the livestock improvement programme, and in the sugar, cotton and forestry sector the number of participants is growing, supported by their respective industries. The Land Bank, which has changed its policies to accommodate resource-poor participants, loaned R50 million into this sector in the past year, a relatively small amount that can be expected to grow exponentially. While the technology used by these farmers tends to be that of commercial agriculture, the growth in participation of black farmers in agriculture is important for long-term sustainability

Sustainable agriculture and land reform has been supported by a number of international and local donors whose contribution has been at the policy level and in sponsoring projects. Funding for sustainable agriculture has become relatively scarce since 1994, and this has impacted on the introduction of models to promote sustainable agriculture. For example, the implementation of a programme to promote resource-poor crop production in the Eastern Cape, and the Centre for Sustainable Agriculture in the Western Cape, regarded as being at the forefront of sustainable agriculture (see Box 17), has had its activities restricted by a lack of funding. Nonetheless external funding

plays a crucial role in the support for sustainable agriculture, because government and semi-government institutions responsible for sustainable agriculture have been unwilling or slow to prioritise sustainable agriculture, perhaps pointing to a need to define sustainable agriculture in more tangible terms, promoting its contribution to the government, and to involve decision makers in debate about how to promote sustainable agriculture.

Box 17 Technology development for sustainable agriculture at the CSA

The Centre for Sustainable Agriculture near Malmesbury is carrying out valuable research and developing appropriate farming systems for resource-poor emerging farmers. The aim of the centre is nothing less than to revolutionise small-scale farming in South Africa, through developing farming systems with decreased input costs and capital outlay, and increased productivity. Over a period of twenty years, Gavin Armstrong of the CSA has developed new breeds of livestock, like the docile Red Sandveld Pig and the internal-parasite resistant strain of Damara sheep, which are adapted to the harsh Sandveld conditions and are productive on inexpensive diets. Extensive research has also been carried out on developing sustainable fodder systems using perennial trees and leguminous winter annuals. Well over 250 species of plants have been tested, with the emphasis on multi-functionality, and many are planted out in a large arboretum at Damara Farm. Armstrong has also devised and is testing a semi-intensive pig/chicken/vegetable system designed for profitable small-scale farming in harsh conditions on marginal land. Currently, valuable transfer of ideas and changing of mindsets has occurred as traditional research institutions have become exposed to innovative ideas. His goal is to supply farmers with a place to see these appropriate technologies, and with the low-input resources themselves. Practical skills transfer and hands-on training are envisaged for the future. A major constraint to the spread of this valuable technology is lack of funding to support this groundbreaking research and to further its spread – despite enjoying the moral support of various government agricultural institutions, universities and rural development organisations, a number of which are carrying out scientific tests on Armstrong's livestock. Market demands and standards also constrain spread of new and appropriate resources – for instance, despite the fact that the meat of the Red Sandveld Pig is very fine, abattoirs were initially reluctant to accept pigs or give fair prices because of their different skin colour.

Livestock

In the field of animal production, noteworthy trends include the move towards game farming rather than cattle production, increased use of indigenous resistant animals rather than exotic breeds, and the emphasis on maximising the value of South Africa's indigenous goat producers. There are some six million SA goats, many in communal areas where their off-take is low. An ARC project is looking at how community based enterprises can be formed using goat products, including mohair, hides and meat. In poultry production, the ARC runs a project called Fowls for Africa that sells hardy or indigenous fowls to communities for rearing as backyard chickens, as well as for broilers. This project is popular where it has been introduced and fulfils the principles of sustainable agriculture. Box 18 describes the evolving approach of the ARC towards technology development.

Tractor driver at Kutlwanong

Box 18 The ARC and technology transfer versus farming systems

In many parts of the country the ARC is working with communities, developing technologies and methodologies that are appropriate to the needs of resource-poor farmers. As the organisation learns, its researchers move away from a linear approach based on technology transfer into a learning culture based on working with farmers in a farming systems approach. In general, the ARC works closely with government extension staff providing training and support. Unfortunately, extension services need to be restructured as in the case of wool producers, before they will be effective. Although these projects are somewhat isolated, they add up to a promising development in terms of restructuring agriculture in the country.

Undoubtedly, new technology in agriculture from the 1950s represented a setback in terms of sustainable agriculture practice. For example, frequent dipping of livestock led to resistance of ticks developing, as well as destruction of natural predators. The use of toxic substances like dieldrin for insect control in crop production led to long term effects on ecology. But with an educational process has come a better understanding of the importance of ecological practices in agriculture – researchers and farmers try to find better ways of avoiding tick-borne problems in livestock by selecting indigenous animals or breeding resistance. The use of pesticides in crop production is seen as only one method in an integrated system, and some progress has been made to minimising the effects of pesticides on environment. Farmers who used to use arsenic to poison jackals in sheep farming now understand the negative effect on predator birds, and work to tolerate a certain level of loss in their sheep, or use non-poisonous methods of control like trapping. In many parts of the arid bushveld of the country, cattle farming has been replaced with a mixed farming, but it is accompanied by a move towards cattle for meat being finished in feedlots on grain, a less sustainable practice accompanied by the concentration of wastes. In turn, the accumulation of manure has stimulated the use of natural fertilisers in horticulture. Assessing the balance of sustainability in such a livestock system is beyond the scope of this paper, but it illustrates the dynamism of the process. Undoubtedly the driver in this process is the market economy, with government policy playing a small role. It is consumer demand, especially in the field of food safety and

environmental protection, that will drive the sustainability or otherwise, just as consumerism for red meat drives the feedlot industry.

It is a general concern that research and support services in South Africa are oriented towards technological solutions and not towards capacity building. Institutions like NAFU, which represent richer farmers, tend to dominate organised black agriculture and capture resources, whereas capacity building is really needed at grassroots level. Still there is probably more farmer organisation now than five years ago, which indicates movement in the right direction.

There has been much debate globally on whether sustainable agriculture is feasible in all agro-ecological situations (particularly when looking at the interaction between agro-ecological zones and different levels of human population). The stand taken would depend on one's definition of sustainable agriculture. In the case of low-input low-output, then it certainly applies more to some sectors, like extensive livestock, than to others. If the definition allows for high-value high-producing without damaging the environment, then it can be applied equally everywhere, though some sectors may be more dependent on polluting inputs than others – i.e. the technology for IPM may not exist for bananas etc.

Overgrazing by livestock leading to erosion is an important indicator of a lack of sustainable agriculture. Although the rangeland system in resource-poor areas is reasonably efficient as a low-input low-output system, it cannot sustain the people living in these areas, and in high rainfall areas, it is being practised on a deteriorating resource base. In low rainfall areas, it has been shown that the high stocking rates do not lead to erosion of the land. However, the income accruing from these systems is lower than it might be, and livestock husbandry is being promoted through partnerships between farmers' organisations, government, the ARC and commercial farmer organisations. Out of these partnerships, models for sustainable livestock farming may be developed. These models promote the use of the best characteristics of resource-poor agriculture – raising hardy animals that are disease resistant, but combine this with improved animal management. Similar

projects are being formulated that start from a perspective of resource management, but envisage moving into other aspects of agriculture. A national goat project is similarly oriented to improving the use of indigenous animals by better management.

Technological developments in horticulture

In horticulture, the demand for organic produce in South Africa is small and limited to an elite market. The demand for sufficient food at low cost is the main driver in the bulk of agriculture, with millions of households living below the poverty line. In rural areas, in informal areas around cities and in even in townships, there is a significant movement towards improving horticultural supply for own consumption and local sale. Food gardens are supported by government departments and by many NGOs, and most gardens use sustainable technology, although productivity varies enormously. Thousands of people are involved in gardens. Another initiative that has had an impact in poor areas is Trees for Africa, a greening initiative aimed at tree planting and agricultural development through permaculture; this has made a difference in townships.

There is reportedly evidence in some (Northern) countries that sustainable agriculture and cheap food are not incompatible. There is little documentation of this in South Africa. However, ideally, sustainable agriculture and affordable food should be part of the same equation – through producing what is in demand in the places where you have comparative advantage using the best available, lowest impact system.

For export horticulture, the market is demanding the minimising of pesticide and fertiliser usage, and farmers are beginning to experiment with the use of manure and compost on orchard crops. Box 5 described the drivers for movement towards the use of integrated pest management (IPM) technologies in the citrus sector, and Box 19 provides some information on the move towards IPM in the deciduous fruit sector.

Box 19 Integrated Pest Management in deciduous fruit production

Integrated Pest Management (IPM) is the use of biological, physical, cultural and least-toxic chemical controls to maintain acceptable levels of pests while reducing pesticide use (Thiers, 1997). IPM requires careful and adaptive management, as opposed to the use of calendar sprays to control pests in conventional farming methods. Some scientific institutions are beginning to explore IPM more, in response to high levels of resistance to chemicals. Despite this, many stakeholders believe there is minimal promotion. In South Africa, a number of factors have driven the growing adoption of IPM in several farming sectors, however. The deciduous fruit industry in the Western Cape has had a reasonable level of success in changing from conventional agriculture to use of IPM. The process of change was driven by a broad-based group, which was felt to be more successful in persuading farmers to change than had the driver been one discrete pressure group. Strong impetus to change was provided by the collapse of control over the red spider mite by conventional sprays. Regular meetings by an IPM group provided opportunities for exchange of ideas and recommendations on control options. IPM group meetings also resulted in farmers realising that an integrated approach needed to be adopted for all pest control. Good communication channels in the relatively small production area of deciduous fruit also facilitated flow of information. The industry had a clear vision of where it needed to go, which had been developed by all those involved in the process of change. Another critical factor for change towards more sustainable farming practices identified by this case study was the need for a plan of action steps, including monitoring measures. Transition to IPM in the deciduous fruit industry is not a simple process – farmers are expected to give up something they know and understand for something new and different. When pressure is relieved, for instance when control was once again achieved over the red spider mite, farmers no longer saw the need to practise IPM.

Source: Rencken (1997)

On Inala farm, a highly productive commercial land reform farm in Mpumalanga, research is being done by the ARC on the effect of using manure in orchards, technologies that have not been in use for thirty years. At Inala, varieties are selected that will minimise the need for inorganic fertilisers, while still selling onto an export market. The farm

is also exploring channels for maximising its revenue through sophisticated marketing, rather than relying on the mass markets developed by Outspan and other marketing Boards.

An exciting initiative in sustainable horticulture is the use of indigenous plants, both in gardening and in houseplants. South African indigenous plant material is the basis of the Dutch horticultural industry, and South African research is now beginning to make available plants that can be used by small-scale farmers and sold into international markets. One project is researching indigenous northern Cape plants and making them available through a local nursery project. In irrigation technology, there have been important water conservation gains, and a trend of conversion from low value to high value crops. For example in the Vaal Harts irrigation scheme, farmers have converted from annual crops and pastures to permanent orchards. On the other hand, the bulk vegetable crops, tomatoes, onions and especially potatoes require large inputs of water, energy, fertiliser and pesticide for their production. For green vegetables, more organic production methods are used. A new trend is to use hydroponics on a commercial scale. For some 'purists' this technology is not considered to fall within the definition of sustainable agriculture, but in marginal areas it could be regarded (using a more pragmatic definition) as being a sustainable practice. This highlights once again, at least for the PTW team, the importance of the broader, inclusive definition of sustainable agriculture used for this study, as well as the need to debate and come to some kind of consensus around a sufficiently inclusive, but still meaningful, understanding of the term.

In Northern Province, where irrigation is dependent on groundwater pumped through boreholes, groundwater levels have fallen to the point where water yields can no longer be sustained, and farmers are beginning to lose irrigated land. Under new water law, water charges will drive the changes in irrigation technology away from use on low value crops and water consumptive irrigation towards more sustainable practices. The law will also attempt to regulate the use of groundwater.

Crop production

In arable production, most farmers continue to rely on high input production systems. There are a few farmers experimenting with intercropping, low or no tillage systems (see Box 19 or 20) and especially integrated pest management and biological pest control. Markets, and the absence of a safety net in the form of drought relief force farmers to minimise their risks and to use long range forecasting to predict likely returns. Farmers have also diversified away from maize as a way of lowering risk, and soybean as well as oil seed production has increased. Groundnut and cotton production has increased following improved prices (cotton) and new seed varieties resistant to disease. Farmers have also increased their own milling capacity, through the use of small-scale mills, and add value to their grains by feeding animals for dairy or poultry production. Additional concerns in crop and horticulture production include the use of transgenic biotechnology, as well as the use of seeds resistant to pesticide as a form of weed control.

Box 20 Minimum tillage and the No Till Club

Minimum till agriculture, where there is no ploughing but rather the use of tined instruments, represents to some degree an island of success in the South African agricultural mosaic. Although herbicide use may be high, these are reportedly broad-spectrum products with no residual action and no soil action. Ben Fyfer has been growing wheat using minimum till methods on his diversified farm in the Swartland of the Western Cape since 1978. He first tried this method in the late 60s, but gave up because appropriate instruments and more environmentally friendly herbicides were lacking. Farming instruments designed for local conditions, such as the Piketberg planter, are slowly becoming available as demand grows.

Fyfer's motivation for switching to minimum till was the degraded nature of the land – in his words, "I could see that the plough had completely destroyed the structure of the soils". There were economic incentives too – less diesel is used and machinery costs are lower, although cost on fertiliser is the same. By leaving as much organic matter on top of the soil and tining as little and as shallow as possible, minimum till results in less runoff and wind and water erosion, build up of soil organisms and improved soil structure, and greater retention of moisture. Minimum till is gaining ground in South Africa, but the percentage of farmers using the method is

small and support measures need to be put in place to compensate for the yield penalty when converting to this system. As Fyfer says, farmers need to believe in the system and really want it to work – "if you just try it as an experiment, it won't work". The Swartland agricultural extension office notes that the Department of Agriculture has recently taken a decision to promote the spread of minimum till methods, but appropriate implements are still lacking, and it is difficult to change farmers' perceptions. Anthony Louw, agricultural extension officer, notes that subtle influences are the best way to change mindsets: "you plant a seed and then it grows". He feels the most effective method for technology transfer is farmer-to-farmer. Better farm management skills are also required for minimum till farming. Louw cites budget and lack of extension personnel on the ground as further constraints to the spread of more sustainable methods.

A group of pioneering farmers in KwaZulu-Natal has banded together to form the No Till Club to create a forum for exchange of information, experience and skills about no till agriculture, as no-till applications for different crops, agro-climatic zones and soils in South Africa still need to be explored. Another objective of the club is to lobby for the necessary research by government and commercial institutions. Anthony Muirhead, pioneer of no till in KwaZulu-Natal, echoes comments by Fyfer and Louw about the difficulties inherent in the conversion process from conventional tillage to minimum or no till, exacerbated by the present lack of no-till extension and backup. Muirhead states that no till is a long-term process, requiring a "fundamental mindset change" (Nel, 1998).

In all agricultural practice there has been a sharp move away from labour intensive production towards capital intensity. In the South African context this limits sustainability, because of the cost and scarcity of capital, and the massive unemployment in the countryside.

Sustainability of the agricultural system is in many cases a result of the dynamic adjustment of rural communities to changing natural, social, political and institutional environments. Technology use needs to be similarly flexible.

Critical success factors for conversion

The following critical success factors for the conversion period to more sustainable farming practices have been synthesised from case study material in this report (Box 21). The far-ranging nature of these factors underlines various social, policy and financial factors that need to accompany 'technology transfer' – in other words, successful adoption of technology relies on far more than just the technical aspects of the new approach.

A number of these critical success factors have strong policy implications. For instance, policy mechanisms could go far towards providing economic motivation for change and tangible support during the conversion process. Policy should also set in motion processes to develop extension services so that they are better able to support sustainable agricultural practices through appropriate knowledge and skills.

Box 21 Critical success factors for conversion to more sustainable farming practices

- Strong impetus to change – may be ecological, but usually with dominant economic motivation
- Clear, broadly developed vision of goal of the change process
- Knowledge and an understanding of the basic principles of the new technology
- Development of network for skills and experience transfer
- Availability of appropriate extension services
- Complex management skills
- An adaptive and flexible approach
- In many cases, leadership by a strong and committed individual
- Availability of suitable implements and resources
- Support to alleviate yield penalty period during conversion process
- Defined action plan to implement change
- Monitoring of implementation process

Progress towards SARLs

Foregoing sections dealing with policy, institutions, technology and organisations have sketched a background of the degree of progress towards SARLs in South Africa. This section builds on this by summarising the opinions and perceptions of a wide range of stakeholders interviewed in both national and provincial surveys, as well as through other PTW research elements.

Achievement and promotion of sustainable agriculture

A common thread running through the responses to both national and provincial surveys was that positive developments and success stories are not generally industry-wide, do not share a common vision, may not be publicised broadly, and do not, as yet, occur within any integrating framework. The perceptions of stakeholders explored in this study endorse the understanding of sustainable agricultural production systems as "islands of sustainable practice" floating in a "sea of unsustainable practice" in South Africa.

The notions of both failure and success are subjective, and both are dependent on one's conceptualisation of sustainable agriculture. Thus a small number of respondents, mainly from government and the private sector, including commodity organisations, felt that most commercial farming (of the high-input, capital and machinery intensive nature) was sustainable. While private sector respondents tended to feel that commercial farming was sustainable, many felt that little was being done to promote sustainable practices. For instance, only two out of seven private sector participants in the provincial survey felt that sustainable agriculture was promoted in the Free State (Madolo, 1998). A majority of respondents, however, either felt that commercial farming was largely unsustainable or noted selective success for the commercial

sector through methods such as minimum till, intercropping and agroforestry. Agricultural projects involving partnerships between different role-players/stakeholders appear to have a greater chance of success than more isolated endeavours. One such example, involving partnership between government and civil society in integrated catchment management, which is facilitated by an NGO, is discussed in Box 11. Several respondents (from both government and civil society) noted that neighbouring SADC countries had in many cases better agricultural practices and enabling environments for SARLs than South Africa, suggesting that an intervention to investigate these and apply the lessons learned would be wise.

A number of case studies, presented in the boxes, arising out of the PTW research activities have been examined in some detail in order to illustrate specific approaches and services provided in pursuit of sustainable agriculture. In many cases, where there are positive developments, it has not been possible to identify the policy causes and effects - in fact, most case studies cannot be clearly identified with government policies at all. This is due both to the dynamism of the policy environment and to the fact that many successful examples involve individuals working outside of the policy arena. Case studies also highlight different institutional arrangements that may be employed in the pursuit of more sustainable agricultural practices. Although all case studies represent some measure of success towards achieving sustainable agriculturally-based rural livelihoods, they also highlight negative factors affecting spread of sustainable agricultural approaches and technologies.

Previous sections have outlined the dynamic policy environment in which any debate on sustainable agriculture must be located. It is clear that new policies are being formulated to reverse former discriminatory policies and broaden access to land and entitlements. Implementation of these changes is sometimes slow, especially on the part of government. However, it is the case that in general agriculture as a sector is more dynamic and is developing a culture of broad participation by all and a greater diversity of role-players than was the case ten years ago.

Despite its considerable problems and setbacks, overall, it is moving in the direction of greater sustainability. Whether this change is rapid enough, or satisfies the needs of all role-players, is questionable. Generally, people read about change more than they feel it affects them. The democratic ideal of having full participation in the policy process has yet to be realised, and the political ground in agriculture remains contested. As a national survey respondent noted:

> *"In terms of the draft White Paper on Agriculture, promotion of sustainable agriculture will become government policy. This does not mean that it will happen on the ground."*

The national survey reflects the perceptions of a wide range of stakeholders in the sustainable agriculture field. Adequate inclusion in policy will not be enough to change those realities – far reaching actions will need to be implemented so that farmers and the citizenry in general become active players in their own development. This implies that they are not merely included when policy is discussed, but systems and mechanisms are put in place to allow for an active and dynamic policy development process, not one which is controlled by the government and policy makers as is the case at present. These debates need to move away from the narrow agricultural focus of the past into wider issues of rural development. This point is discussed in greater detail in the sections on policy constraints and alternatives that follow.

From the above description of policy and its implementation through practice, it is clear that South Africa does not promote a low-input, system of agriculture. This was a clear message of both national and provincial surveys, from a wide range of stakeholders in the agricultural field. On the other hand, taken from a broad perspective, South African agriculture appears to be moving towards greater sustainability through a combination of policy measures, private sector initiative and market forces. This has to be understood in relative terms, as there are many contradictory and conflicting trends. At a technology level, we see the introduction of integrated management and minimum tillage alongside the introduction of biotechnology that allows maize to be more resistant to herbicides, a questionable practice.

Despite mention of a range of approaches and technologies harnessed in the movement towards SARLs, there was consensus among national and provincial survey participants that sustainable agriculture, in terms of low external input sustainable agriculture or other pro-sustainability or pro-people approaches, was not being achieved in the country. Organisations with a broader policy mandate were mindful of the complexity of the task of achieving sustainable practices in a broad sense. Sustainable agriculture practices involve long term change in farming patterns, and will be driven by incentives as well as education and information. Changes in sustainable agriculture will probably be incremental rather than dramatic increases. As an NGO respondent noted:

> *"Skills wise, sustainable agriculture requires greater diversity of skills, and being able to take a more holistic view of production than commercial farming requires."*

Sustainable agriculture practices might also be more labour intensive and thus could play a valuable role in much needed job creation. Both government and civil society respondents supported the notion that promotion of low input sustainable agriculture in South Africa was only being undertaken seriously by a handful of NGOs. NGO respondents in particular were of the view that government, which should have a major role in sustainable agriculture, is not playing its role fully. A number of respondents did however note that government was introducing programmes, such as the LandCare Programme, which was actively supporting sustainable agriculture. An important trend noted in the survey was that some people in government and especially the commercial sector are sceptical about the possibility of developing a small-scale farming sector. But this attitude seems to be changing, as the Minister of Agriculture and some parts of commercial agriculture have made strong statements supporting a small-scale farming sector. There are also many smaller initiatives supported by donors and others that are changing the negative mind-set towards resource-poor agriculture. The change in perspective of large public funded organisations like the ARC will have a major change in giving recognition to resource-poor

agriculture. Incentive programmes that award successful smallholder farmers, such as the Master Farmers Programme described in Box 22, have a role to play in raising the profile of small-scale farming and beginning to turn around the dominant mindset of large-scale commercial agriculture.

Box 22 The Master Farmers Programme

The Masters Farmers Programme, supported by Goldfields and WWF-SA Environmental Programme, has been set in place to promote successful and sustainable intensive farming by smallholders. An annual public event is held where awards are presented, and apprentices are placed with master farmers to assist them and to learn their techniques.

This section has provided a summary of the degree to which agriculture in South Africa is moving towards SARLs. It is clear that in terms of the definition of sustainable agriculture adopted for the PTW research, this has not been achieved and there has been very little promotion in the country. New policies and developments outlined in preceding sections highlight that this situation is beginning to change. In order to support these positive moves, the following section draws together major *challenges as highlighted by the PTW research, before moving on to* some practical recommendations for overcoming these constraints.

Challenges for policy

While this section focuses on challenges that will need to be addressed to progress towards SARLs, we would like to stress that this in no way implies that the situation is only negative. Previous sections have highlighted many positive policy and non-policy developments. We focus in this section on constraints, however, as these are key critical blockages that will have to be overcome in order to be able to harness the potential of progressive policies, innovative and hard-working farmers, whether small or large scale, as well as other committed role-players. If the agricultural and rural development sector, both public and private, can address these issues, then the challenges can be turned into opportunities, which is in everybody's interest.

Policy challenges include both constraints arising because of specific policy elements, as well as negative factors existing because policy is (deliberately in some cases) avoiding addressing these issues - a case of policy vacuum and/or policy neglect. Challenges also arise through non-harmonisation of policies that impact on each other, as well as perverse effects of well-intentioned policies. It is also clear that many constraints to achieving sustainable agriculture have arisen as a result of the policies and the resulting agricultural systems and institutions of the previous government.

The key policy challenges, as identified through the PTW research, are now discussed individually. The section closes with a reminder that constraints in many cases act cumulatively, emphasising the need to deal holistically with these issues when developing and implementing policy designed to address them.

8.1 Fragmented policy development and implementation

Concerns have been expressed by many stakeholders that current policy and law making is not being carried out in an integrated and interactive fashion. Auerbach (1993) noted that agriculture is divided into "little hermetically sealed boxes" (the different farming sectors), while sustainable resource use requires an understanding of their inter-relationships. Despite inclusion of a section on sustainable resource use in the current policy discussion document, this criticism still remains valid. Co-ordination in terms of both policy formulation and implementation is perceived to be lacking, and is a consequence of the strong disciplinary approach of, and poor co-ordination between government departments at both national and provincial levels. This is a significant constraint to achieving sustainable agricultural livelihoods. The land reform case study of the Kutlwanong Farmers' Trust (KFT) reveals how this lack of integration can result in the failure of policies to fulfil their objectives. In brief, the Department of Land Affairs is responsible for the transfer of land ownership to land reform beneficiaries, which usually involves a supportive process lasting some 18 months. After this, the Department of Agriculture is expected to take over the support process. Despite the preliminary support process, lack of expertise means this is rarely carried through to the start of farming, which is when the organisation is really tested. In the case of the KFT, this was compounded by the lack of expertise with respect to organisational support on the part of the Department of Agriculture and other financing stakeholders, and a lack of recognition on their part of the importance of such support (Carnegie et al, 1998).

8.2 Need for more inclusive policy processes

A key policy constraint is the lack of inclusion of a broad range of perspectives, particularly those of the producers, during development of agricultural policy. This is despite the pervasive rhetoric of people-centred development in public policy, and despite the fact that policy development is undeniably more inclusive than it was 10 years ago. Commercial farmers have stated that they are not part of national policy

formulation processes. Emerging farmers, peri-urban farmers, land reform beneficiaries and farm workers participating in the PTW research often are not aware of current land and agricultural policies, or do not really understand these policies. Thus a valuable opportunity to ensure that policies developed will indeed support sustainable livelihoods, through inclusion of the voices 'on the ground', is in danger of being lost. Within the agricultural community itself, there are sharp divisions. This has tended to slow the process of consultation, which was so prevalent in the early days of policy formulation. This is not necessarily problematic, as stakeholders are certainly consulted as part of the policy process. But what does tend to happen is that the opportunity to build common understanding and achieve a shift of paradigm is lost.

Agricultural development is a highly ideological and political process. New agricultural policy needs to be based on currently acceptable societal values in order for it to be perceived as legitimate. Reconciling different values, perceptions and needs around the concept of sustainable agriculture, pointed to by the results of the national survey, will be a challenge for the relevant authorities. As Pretty (1995) has noted, sustainable agriculture is not a simple model to be imposed, but rather a process for learning.

8.3 Political issues and pressure to deliver

Political issues hampering the spread of sustainable agriculture and SARLs relate to a perceived lack of political will or broad commitment to sustainability on the part of government. Political pressure to deliver also means that insufficient time is allowed for the institutional transformation, as well as the exploration of more appropriate natural resource management approaches, that are necessary components of SARLs. Stakeholders noted lack of investment by government in promoting sustainability, especially when capacity to implement policies is considered. Short-term political expediency means that government spends large parts of its budget on unsustainable salaries while investment in longer-term capacity building is forsaken. These political

issues are compounded by the current, and necessary, state of transition of many agricultural institutions. Restructuring of institutions is required in order to improve service delivery, training, research and technological development. It is important that this restructuring does indeed bring about better integration and synergy with the needs and desires of all farmers.

Analysis of the experiences of land reform beneficiaries of the Kuthwanong Farmers' Trust indicates that slow institutional transformation, while necessary, may be a causative factor in the disjunction between policy and practice in institutions under political pressure to deliver (Carnegie et al, 1998). This disjunction is discussed under the following point. The identified lack of recognition of the integral role of social and cultural dimensions on the part of many stakeholders is a related constraint.

8.4 Disjunction between policy and implementation

Although the concept of sustainability is writ large in policy on agriculture, land reform, water affairs, forestry and environmental management, the key question is whether the capacity exists to translate *this policy into practice. Where policy makes a systemic change, such as* with marketing and trade policy, tenure reform or subdivision of land, the changes on the economy as a whole might be quickly felt. But where changes have to be implemented through programmes, the capacity of government to implement such programmes has been shown to be limited; yet policies are ambitious and not clearly aligned to capacity to implement. There is a general perception that there is a shortage of people skilled in sustainable agricultural practices in the country, in both government and non-government sectors. This lack of human resources compounds other perceived institutional constraints.

There appears a disjunction between policy and implementation, and perhaps both need to shift to get them into alignment. Policies need to be less ambitious, and implementation better managed, so that workable changes can be brought about. Otherwise many of the excellent

concepts contained in policy will never see the light of day. A further concern of policy that is too far ahead of implementation capacity is that its perverse effects begin to show: uncertainty about land tenure leads to farmers evicting employees, or forestry investment slows down because of uncertainty over future use rights. All this can be said with the benefit of that most exact science, hindsight. The aim is to look at what can be learned about policy processes, not to criticise for the sake of criticism.

8.5 Inclusion of key groups

Agricultural policy, institutions and support services have begun to acknowledge a broader client base than the former definition of white commercial large-scale farmers. This recognition has been evident in policy from the 1995 White Paper on Agriculture, and is clear in the actions of agricultural institutions such as the Free State Department of Agriculture. However, more action is needed to foster the active participation of key groups such as youth and women. Without the involvement of youth, the future of agriculture is bleak. The provincial baseline survey found disturbing levels of youth apathy to agriculture, which require urgent action (Marumo, 1998). This was reinforced by response to the national survey suggesting that the profile of agriculture would need to be raised in order to attract the youth. At a more specific level, both survey responses and literature reviewed highlighted the lack of recognition in research, extension and policy, of the key role played by women in agriculture. As the primary natural resource managers, rural women play a major role in agriculture yet lack support towards fulfilling their

Women from Kutwanlong carrying hay to the chicken house

important task. While there have been moves to address this situation, further effort is needed to implement positive policy principles through adequately resourced support programmes. Recognition and support will require change to the prevailing mindset of agriculture.

8.6 Dominant mindset of agriculture and lack of consensus on SARLs

The predominant ideology of agriculture, perceived by many as being strongly biased towards what was variously termed "commercial" or "industrial" agriculture, is a major constraint to the spread and implementation of sustainable agriculture. In this prevailing mindset, sustainable agriculture is marginalised as a "rural development strategy only", and, revealingly, as an "environmental" issue. A related issue is the lack of a clear vision among role-players as to the meaning of sustainable agriculture. As one government sector organisation noted, "The major issue is that to many, current agriculture is not perceived as being non-sustainable". This is linked to lack of consensus on the meaning of the concept. The current situation, referred to as the "bandwagon" approach by a number of respondents, where people are using the concept of sustainable agriculture in fundamentally contradictory ways, mitigates against the development of a clear vision

A defining component of the dominant agricultural mindset is the consideration of economic viability as the main basis for agricultural planning, at the expense of ecological integrity and conservation of the resource base, as well as at the expense of building organisational capacity amongst emerging farmers. Furthermore, the timeframe over which economic viability is calculated is key to an assessment of sustainability of a farming system. The relationship between economic welfare and improvement in environmental investment in agriculture received only peripheral mention in this study. Future research is needed to determine the relative importance, as a key-contributing ingredient of increased environmental investment, of economic success alone as opposed to other factors like better market access and better tenure rights.

As a strategy for challenging the dominant mindset, additional funding for research organisations is needed for specific studies – for instance, resource economics studies on the true costs of non-sustainable practices. Clearly most respondents to the national survey viewed economic sustainability as an important factor, if not the bottom line, in the sustainable agriculture equation. Thus strategies to increase understanding of the sustainability of different agricultural practices, and to promote the spread of more broadly, and thus truly sustainable practices, should be couched in this common language for efficacy. In this way, the resistance to movement towards sustainable agriculture if it does not contribute to economic viability in the short term can begin to be challenged. This resistance is currently being expressed as the need to "not tamper with national food security", thereby silencing any debate around the issue. One respondent noted possible racist undertones, as mainstream thinking tended to base all assessment of agricultural viability on white perceptions.

8.7 Lack of a rural development champion or strategy

There is no champion to drive the promotion of sustainable agriculture and rural development in the country, and to ensure co-ordination and communication amongst organisations, institutions and farmers. Those who promote sustainable agriculture do not engage with the commercial sector. We see a high-profile champion as a key means to address the narrow dominant mindset of agriculture, and the lack of consensus around concepts, which in many cases is politically disingenuous. Related to the lack of a champion is the lack of a consolidated rural development strategy in South Africa, or even a broad understanding of what this would entail. This is a point highlighted in a recent critique of the land reform programme (Wildschut and Hulbert, 1998). Special programmes such as LandCare, the Spatial Development Initiatives (SDIs) of the Department of Trade and Industry, and the DLA's Land Reform programme, have provisions built in touching on rural livelihoods, but what percentage of people are being reached? Planning initiatives like the land development objectives (LDOs) required in terms

of the Development Facilitation Act will potentially mean that inhabitants of all municipal and rural council areas will have an opportunity to make sure that their rural development issues shape development planning. While this is positive, the lack of a coherent rural development policy means that the national framework for these discrete or local initiatives is absent.

A related point is the need to co-ordinate donor assistance, both for more effective use of resources and to ensure that value systems promoted are consistent with current socio-political norms. Current donor initiatives, of which the DANCED project to support integration of environmental concerns into the land reform process is one of a number of examples, and donor support of many of the sustainable agriculture "lone endeavours", highlight the significance of this involvement.

8.8 Inappropriate support for the emerging and small-scale sector

Existing agricultural extension services were perceived by many stakeholders to be inappropriate, and were totally lacking in the past for small-scale farmers. While policies are in place to address this, there *is still little understanding of the multi-dimensional nature of SARLs*, as indicated in the framework represented by Figure 1. In particular, the centrality of social factors for sustainable agrarian reform is not broadly understood by service providers, and many extensionists lack expertise in this area. This was graphically illustrated in the KFT case study. The important role to be played by extension services is highlighted by the recognition that agricultural research and extension are not discrete rational acts, but rather part of the process of coming to terms with conflicting interests and viewpoints. Thus, strong linkages need to be made between the formerly discrete spheres of research and extension. Approaches such as Farming Systems Research and Extension (FSR&E) and Participatory Rural Appraisal (PRA), which provide methods of addressing questions of participation, self reliance, technological development, on-farm research and

experimentation for sustainable agriculture should be taught by institutions training extension staff.

Furthermore, the education system is failing to confer holistic understanding and awareness of the need for sustainable development, and training facilities and materials for sustainable agriculture are lacking. In addition to inappropriate extension services, small-scale farmers also currently lack appropriate resources (including suitable plant and animal breeding material), inputs and credit and marketing systems. Traditional knowledge, still a mainstay for smallholders in other southern African countries, has been discounted in the past, and much indigenous farming knowledge has been lost.

Other factors that impact on the viability of the small-scale sector are problems with the access to markets, and the state of rural infrastructure. Facilitating access for smallholders to new technology, such as the internet, will be increasingly important. However, very often the poor state of infrastructure, such as roads and physical market structures in rural areas is a more immediate priority. Improving rural infrastructure is clearly a role for government, but one which it has been reluctant to assume, within the context of diminishing fiscal allocations. More recently, there have been some indications of a realisation on the part of government that this is not an attractive area for private sector investment, and one which government will have to take on somehow.

8.9 Land use and farming practices that degrade natural resources

Inappropriate land-use patterns and unsustainable farming practices, linked to both communal tenure and the strength of private property rights, are apparent in South Africa and were noted by respondents to the national and provincial survey. As discussed previously, much land degradation can be linked to the social engineering policies of the apartheid regime. However, the PTW research has also revealed a lack of understanding of the environmental impacts of many agricultural practices at all levels. There is also tension between resource

conservation goals and pressure to deliver rapidly – this has been apparent in the land reform programme, where natural resource management imperatives, together with social and organisational issues, have tended to be neglected in the land transfer process. Programmes to address resource conservation issues, such as Working for Water and the LandCare programme have been noted, as well as some of their constraints (such as their ad-hoc nature and the emphasis on short-term job creation, at the expense of long-term awareness-raising). One gains the impression from the current agricultural policy discussion paper that great hopes for the spread of sustainable agricultural practices have been pinned to the LandCare programme. It is critical that it receives the necessary institutional and financial support, and that broader mechanisms are implemented to ensure meaningful integration of resource conservation practices throughout South African agriculture. This also highlights the need for greater co-ordination and policy harmonisation between DEAT and the NDA.

8.10 Uncertain position of NGOs

With the delay in the establishment of the national development forum, many NGOs who have in the past offered services to the rural sector, have closed down due to lack of funds. The central channelling of all development funding has hampered new development by further bureaucratising processes and preventing independent partnerships developing. Organisations that with minimum government support are 'experimenting' with ways to develop sustainable approaches to agricultural production, like the Centre for Sustainable Agriculture (see Box 17) and Thlolego Learning Centre (a centre teaching permaculture and alternative building design), struggle to survive for want of secure funding. This study has highlighted these and other lone endeavours, which require wider publicity, and better external support to what are currently "non-policy alternatives". In a number of cases, it appears that flow of benefits is more from NGO towards government, with very little in return. If policy were implemented, both would be able to bid for government support, through which to improve dispersal of their new technological developments.

8.11 Research, advocacy and funding to demonstrate the viability of sustainable agricultural approaches

As well as supporting the efforts of NGOs in research and development to demonstrate the viability of sustainable agricultural approaches, agricultural institutions need to improve their performance in this regard. This relates both to the content and the methodology of research. As regards the former, more needs to be done to value and incorporate indigenous knowledge in research, towards a creative merging of indigenous and 'scientific' knowledge. This will assist in changing perceptions of many farmers that there is nothing of use in indigenous knowledge. Regarding the process of research, research institutes need to carry out scientific testing of new technologies with farmers, so that there is collaborative development by farmers of practical and appropriate technology. As an extensionist stated, "farmers are practical people, and will believe what they can see". NGOs committed to service delivery and innovation could still be important role-players in introducing sustainable agriculture, and ensuring access to technology for the small-scale sector. There is a great deal more that needs to be done to develop synergy between large parastatals such as the ARC, university- and college-based research facilities, extension workers and farmers in collectively developing new ideas and applying them. While some institutions have recognised the need for closer synergy, often 'turf' battles and the lack of financial resources have made it impossible to establish inter-institutional collaboration. The Science and Technology White Paper on Innovation stresses partnerships in its competitive bidding processes, but agriculture and land reform have been less effective in building collaborative efforts.

8.12 Promotion and awareness

A basic underlying constraint is the necessary and lacking public awareness (to create demand for the products of sustainable agriculture). This will be a key link to the need for demonstrated examples of the long-term advantages of sustainable agricultural practices (to increase awareness and knowledge of farmers).

8.13 Globalisation effects

Global economic and trade liberalisation policies and agreements were identified by stakeholders as significant constraints to sustainable agriculture in South Africa. Examples noted were the importation of subsidised products, such as meat from the EC, and the need to compete with countries that are using unsustainable practices. It is necessary to develop policy and legislative mechanisms to ameliorate negative effects and capitalise on opportunities of the international economic and trade environment. As discussed in section 4, the national macroeconomic policy of Growth, Employment and Redistribution (GEAR) was felt to affect the emerging farmer in particular in a negative manner through its emphasis on global competitiveness.

8.14 Cumulative effects

Discussion under the foregoing points has indicated their inter-linked nature. It is clear that successful agricultural production depends on a balance of a number of variables: climatic, social, environmental, economic, and political. Negative performance in several of these areas may result in unanticipated negative cumulative effects. For instance, unless government policy creates a stable investment climate along with a sense that all rural people have a place in society, there is a real danger that South Africa will go into a negative spiral from its present relative prosperity to an under-resourced, politically-unstable, conflict-ridden economy. Pressure from climate change, such as another drought, can precipitate this.

While it is helpful to develop targeted interventions to address constraints summarised above, one needs to be alert to the possibility of cumulative effects when developing and implementing policy designed to address them. The following section presents key policy alternatives to address challenges encountered in the move towards SARLs.

Policy and institutional alternatives

This section synthesises recommendations for improving understanding, development and spread of sustainable agriculture, drawing on the various components of the PTW research. While many challenges and opportunities have been noted in this report, we are mindful of the need to avoid lengthy and exhaustive 'wish-lists' that are in themselves hindrances to taking action. Thus this section is selective, focusing on strategies to address key issues identified, that we believe are both possible and desirable.

Identify a champion, establish a network, develop consensus and a clear vision

The lack of clarity around the meaning of concepts such as sustainability and SARLs inhibits development of real communication, and prevents the development of common goals and effective strategies towards SARLs. This necessitates mainstreaming the idea of sustainable agriculture and rural livelihoods, and broadening understanding of the benefits of adopting these approaches. This requires both a champion and a mechanism for communication. The practical strategy we propose is a network on rural development, which should embrace the whole range of stakeholders. The network should link in with existing broad-based civil society movements like the Rural Development Initiative (RDI), and should actively seek to identify a high level champion with political clout, who could be the patron of the network.

Initiation of the network will be the responsibility of civil society, supported by donors. Government should work in partnership with this network to draw all parties towards a unified understanding and a clear

policy statement indicating firm commitment at national level to the principles and practices of sustainable agriculture. This partnership between government and civil society could be the mechanism through which a coherent national rural development strategy is developed, and could additionally serve to co-ordinate donor efforts with limited government resources.

Improve inclusivity of policy processes and decrease disjunction between policy and implementation

The need to move from the current agricultural policy paper to a formal policy position provides the opportunity to improve broad and meaningful participation of civil society (including key groups such as women and the youth), different levels of the public sector, and the range of agricultural producers, from resource-poor to established commercial farmers, in policy formulation and implementation. The process to further develop agricultural policy should be carefully designed to ensure integration of all these perspectives. The PTW study has highlighted the fact that politically-driven, over-ambitious policy goals are linked to the disjunction between policy and practice evident in the agricultural sector. This disjunction is also linked to institutional transformation, the need for reorientation of service providers such as the extension services, and the limited existing skills and capacity. Thus the policy development process should seize this opportunity to develop realistic and flexible policy. The need for flexibility in policy is highlighted by the fact that sustainability of the agricultural system is in many cases a result of the dynamic adjustment of rural producers and communities to changing natural, social, political and institutional environments.

Increase awareness of the importance of social issues

The failure of service providers to proceed from an understanding of the complexity and dynamism of livelihoods means social and rural development issues are often ignored. Greater attention to social factors (in both the process and the content of planning) is required to achieve an improved balance of power between resource-poor and well-resourced producers and their institutions, and is critical to achieve the policy principle of reducing the divisions in South African agriculture and society. This can be remedied through re-orientation of extension officers towards becoming agricultural development facilitators, and uptake and development of these ideas by policy makers and researchers. This is proposed in policy, but will require active intervention and dedication of resources. Existing expertise, largely in the hands of NGOs at the moment, should be harnessed for this purpose.

Legislate for local-level partnership structures for rural development

Within the context of a coherent national rural development policy, we propose new structures, in the form of local multi-sectoral rural development fora, to achieve local-level partnerships, preferably statutory and with devolved budget and real decision making powers. The purpose of such structures would be to promote an integrated and coherent approach to rural development, so that land reform moves beyond just the transfer of land to the development of SARLs. Members of the PTW team who visited Bolivia and Brazil witnessed the effective functioning of such structures at local-level, which also exist in Zimbabwe (through the Rural District Council Act of 1996). This will necessitate: lobbying the relevant parliamentary committees; a change to national legislation; better interaction between provincial and local structures; revisiting provincial agricultural functions; and co-ordination between national departments of Constitutional Affairs/Local Government and Agriculture. Such local partnerships would also need

to occur within the context of the Integrated Development Plans (IDPs) that each local council must prepare.

Achieving sustainable agriculturally-based rural livelihoods will require a multi-pronged strategy to rebuild rural economies, with agriculture playing but one part of it. This underlines the need for intersectoral collaboration at all levels during policy formulation, and particularly during implementation. Once again, a lead agency or task team for rural development would serve to promote a unified vision for rural development, set out and operationalised in co-ordinated policies and legislation.

Facilitate a change from the dominant mindset to a 'small-scale is viable' approach

There is a need for greater recognition that small scale is a viable approach – this is endorsed by the current Green Paper on Agriculture, but will require transformation of the mindset of service providers and research and training institutions, as well as active intervention so that the small-scale sector can achieve its potential. This means translation of positive policy principles into practice. It is not clear how this will be done within current government resource constraints, but a beginning is for government to facilitate the development of creative partnerships with the private sector, NGOs and farmer organisations. Creative opportunities for smallholders to exploit opportunities provided by the globalising market should be explored and supported. For instance, niche markets such as those created through Fair-trade organisations are one way to fast-track the profitability of small-scale sector (and promote environmental and social sustainability), and enable smallholders to engage in the world market in a low risk situation.

Build farmer social and organisational capacity

Apartheid has had the effect of disruption of social organisation, particularly in the rural areas. There is a need to look at indigenous organisations and build on what does exist, towards rekindling social

Preliminary planning session with Kutlwanong

structures that will promote development of a viable small-scale sector. The PTW work has shown that organisational capacity building is often a missing component in support to land reform projects. Experience from other developing countries has indicated the key role of farmer social organisations among resource-poor farmers for market access and support. In Bolivia and Brazil, grassroots social organisations have played a key role in maintaining rural livelihoods and productivity of *the small-scale sector in the absence of strong government. Even where* government is strong, strong social organisation is also needed to ensure that, as countries become industrialised and agriculture slips from central importance, the needs of rural dwellers are recognised and that the dependence of urban populations on the rural areas is fully appreciated. Thus people need to organise so that the policies and institutions respond to their needs. This suggests that a key role for agricultural service providers in South Africa is to provide institutional support to emerging farmer organisations strategically, through channelling resources rather than through any directive role, to increase their ability to intervene effectively on the part of their members. Bringing in the social component is a key step towards empowering civil society.

Mainstream natural resource conservation

The PTW research has shown that natural resource management issues, together with social factors, are often the missing element in agricultural planning and development at all levels. There is a great need for awareness raising in South Africa around the environmental implications of different farming practices. While the imperative for resource conservation is in current draft policy, as a key policy reform goal, it is still somewhat of an add-on. What is needed is a clear statement in policy that for agriculture, the environment is the economy, and not some luxury consideration to be factored in once economic viability is taken care of. New legislative provisions, such as the *National Environmental Management Act (NEMA) confer a duty of* care on all land users and owners, and contain provisions to enforce compliance. While mainstreaming NRM issues is a long-term programme, a starting point would be for the NDA to work together with the DEAT in devising a public information campaign to raise awareness of the need for and benefits of sustainable natural resource use. Such a campaign should target both large-scale farmers and smallholders. An important element of mainstreaming natural resource conservation would be to develop the use of indigenous technology and environment-friendly crops.

Conclusions

This overview indicates that sustainability in agriculture is currently receiving more attention than in the recent past. There has been a period of rapid change and increasing outward orientation of the economy, and agriculture, as an industry has had to adapt to this changing environment. Policy changes have been rapid and over a wide spectrum. Although it is too soon to judge their general impact the overall indication is positive. But South Africa is a society living a bit close to the edge. There are many warning signs and government and society need to adopt a conservative approach to yet more policy change. The Bolivian and Brazilian experiences highlight the need now for a period of political stability for effective implementation. Failing this, South Africa may be faced with mounting rural discontent, which may lead, as in Brazil, to increasing militancy of social movements. The most important issue is to give content to the policies already formulated, and to deal with some of the challenges like crime in rural areas. This should be done though building partnerships with all role-players.

Institutionally, agriculture has shown itself to be able to respond positively. In the field of marketing and trade policy, the removal of government controls and subsidies has resulted in a sector with improved profitability, providing South Africa's food needs and exporting successfully. Food prices have enjoyed very low inflation and the agricultural sector has been a consistent contributor to economic growth. Although some farmers have been fearful of the consequences of changed tenure and employment policy, by and large they have welcomed this policy change as offering greater stability in rural areas. For all the concerns about crime and violence the rural sector remains sound.

For many resource-poor families, the land reform programme offers the hope of more secure tenure and the opportunity to earn a livelihood. Inevitably, the pressures of conflicting interests arising out of apartheid and colonial land relations cannot be solved overnight. Rural violence affects all people, and murder can only create mayhem, not solve any problems. The need for land is so desperate in some places that land invasions replace ordered settlement. Theft of livestock and even food makes it difficult for producers of whatever hue to enjoy the stability necessary to earn a livelihood. The poor are inevitably worst affected by lawlessness. But at least there are policies and programmes that give an outlet to the most serious frustrations in rural areas. There are more black producers in agriculture than ever before, and the ownership of the sector is slowly getting more diversified. Credit has been made available to small-scale producers and rural women who never had access to credit before. Partnerships are beginning to develop between government, commercial agriculture and resource-poor land users; these are models that hold great promise for rapid development.

When one looks for positive trends they are to be seen everywhere, and we have tried to illustrate the range of changes in this paper. Perhaps the most negative aspects of sustainable agriculture are that in former homelands, change has been very slow, and poverty in these areas has been exacerbated by endemic crime. Despite programmes like Working for Water, resource conservation has certainly not progressed in the last ten years – it may have even gone backwards. If ever there was a need for focussed government led programmes it is in those areas where the potential exists through agriculture to make a significant difference to rural livelihoods – the high potential areas of Transkei, KwaZulu and Mpumalanga. Government withdrawal from direct involvement in farming through parastatals in favour of community-based initiatives is another good change, but the process of change is proving extremely slow and painful.

The biggest problem facing government and other role-players/ stakeholders is that the task they face is huge, and the capacity they have to meet all needs is weak. Somehow, government and all

role-players need to focus efforts on selected programmes that will have real impact. Government resources are also misallocated – far too much gets spent on remuneration of unskilled and poorly-managed personnel, with too little being available for investment. The fact that this situation was inherited from the last government is hardly a mitigating circumstance. In general it shows government is finding it difficult to make hard decisions that will maximise livelihood creation, and thus sustainability. Similarly, policies of employment equity will make agriculture more sustainable in the long term, but only if managed in such a way that they lead to improved productivity. At present, it is worrying that too much attention is paid to political correctness, rather than to successful outcomes.

Awareness of sustainability is greater than it was ten years ago. It is also understood that it is a more complex process than the way it was defined then – when it was thought that the solution to agriculture's problems was to subsidise farmers with large farming units so that land users would not exploit the land. Now it is recognised that the market economy dictates the allocation of resources, and sustainability has to be understood within that context. Unless agriculture can be economically, environmentally and socially viable it will not be sustainable. Thus the trade-offs between political acceptability, a social contract and the market economy must be managed. On the evidence to date, agriculture is doing as well as any sector in managing this complex trade-off.

South Africa has the advantage of well-developed infrastructure and support services for agriculture. Its challenge is to use those resources to benefit all parts of the economy, not only the white commercial sector. Once the considerable resources of government, research organisations, universities, co-operatives and farmers organisations are aligned, there is likely to be a significant movement forward in the agricultural sector. But at present forces are not aligned – there is too much jockeying for position, different agendas at work, for the vision of the new South Africa to be achieved. The future is not likely to be so simple that there will be sudden change, but more like the dripping tap eventually filling up a basin, the change will become cumulative.

As far as the narrower sustainability issues are concerned, there is good work being done across commercial agriculture and rural development work. A multitude of role-players are passionate about natural resource management, and is aware that high input agriculture has its consequences. There is much to be excited about in sustainable agriculture, even though the challenge is enormous. What is interesting is that work is being done across such a broad spectrum – from urban agriculture and household gardens through land reform and commercial agriculture. Perhaps like government, proponents of sustainable agriculture need to focus their efforts, rather than try and be everywhere. By working within their own field in the belief that small changes add up, they will create a vision of overall change which will lead in a positive direction.

The public interest in sustainability, partly expressed though consumer trends and through media interest needs to be built on through good communication strategies. The opportunity is there, and some organisations like Trees for Africa use it well. The sustainable agriculture lobby should also focus on developing a sound communication strategy to ensure that the message reaches out far and wide. We have proposed the establishment of a network, both for lobbying and to promote greater consensus and co-ordination. This network should play a key role in propagating ideas and raising public awareness, and in mobilisation around topical issues such as the pros and cons of GMOs.

References

African National Congress (ANC) (1994) *The Reconstruction and Development Programme*. Johannesburg: Umanyano Publications.

Auerbach, R. (1993). Affirmative Action for Sustainable Land Use in South Africa. In *Hidden Faces – Environment, Development, Justice: South Africa and the Global Context*. Edited by D. Hallowes. Earthlife Africa: Scotsville.

Bebbington, A. (1999). *Capitals and Capabilities: A framework for analysing peasant viability, rural livelihoods and poverty in the Andes*. IIED, London.

Binswanger, H. P. and Deininger, K. (1993). *South African land policy: the legacy of history and current options*. World Development, Vol.21 (9):1451-1475.

Carnegie, J. & Louw, B. (1996). *Rural Animation Officers: a new extension system in the Free State*. Paper presented at the national conference of SASAE (unpublished).

Carnegie, J., Roos, M., Madolo, M., Moahloli, C. and Abbot, J. (1998). *The rocky road towards sustainable livelihoods: land reform in Free State, South Africa*. Gatekeeper Series Number 79. Sustainable Agriculture Programme, IIED, London.

Carney, D (ed). (1998). *Sustainable Rural Livelihoods: what contribution can we make?* London, DFID.

Chambers, R. (1995). Poverty and livelihoods: whose reality counts?. *Environment and Urbanization* 7(1): 173 - 204.

Cooper, D. (1991) From soil erosion to sustainability: land use in South Africa. In Cock, J. and Koch, E., *Going Green: People, politics and the environment in South Africa*. Cape Town: Oxford University Press.

Croxton, S. (1995). Users in control. Farmer participation in technology research and development. Paper presented at *Animal Traction Network for East and Southern Africa Workshop (ATNESA)*, Karen, Kenya, December 1995.

Department of Environmental Affairs and Tourism (1989), Environmental Conservation Act (Act 73). Government Printer. Pretoria, SA.

Department of Environmental Affairs and Tourism (1997). *White Paper on the Conservation and Sustainable Use of South Africa's Biological Diversity*. Pretoria: Government Printer.

Department of Finance (1996). *Growth, Employment and Redistribution: a Macroeconomic Strategy*.

Department of Land Affairs (1997). *Rural Development Framework*. CTP Book Printers, Cape Town.

Department of Land Affairs (1997). *White Paper on South African Land Policy*. Pretoria: Department of Land Affairs.

Department of Mineral and Energy Affairs (1998). White Paper on Energy Policy (1998).

Department of Water Affairs and Forestry (1998). *Soil and Water Conservation: An audit of South African approaches and activities*. Pretoria: Department of Water Affairs and Forestry and CSIR.

Eckert, J.B., J.N. Hamman, and J.P. Lombard (1996). 'Perceiving a new future: empowering farmworkers through equity sharing'. *Development Southern Africa*, Vol.13, No.5:693-712.

Electronic Mail and Guardian (1998).

Free State Department of Agriculture 1988 *Agricultural Census*. Glen: Department of Agriculture.

Free State Provincial Government and MXA (1998). *Provincial Rural Development Strategy*. Bloemfontein: Free State Provincial Government.

FSDoA (1998). *Operation of the agricultural sector in Parys/Tumahole*. Glen (unpublished).

Gillis, Perkins, Roemer & Snodgrass (1996). Economics of Development, 4th Edition, Norton and Company. New York.

Hobley, M. and Shah, M. (1996). *What Makes a Local Organisations Robust? Evidence From India and Nepal*. Overseas Development Institute Natural Resource Perspectives, 11, London: ODI.

IIED, 1998. Golden Gate Workshop Report

Inala Farms, (1998). Annual Report: 1997/8. (Unpublished).

International Development Research Centre (1995). *Building a new South Africa: Environment, Reconstruction and Development.* Canada: IDRC.

Khan, F (1994). *Rewriting South Africa's Conservation History – The role of the Native Farmers Association.* Journal of Southern African Studies, Volume 20, Number 4, December 1994.

Land and Agriculture Policy Centre (1997). *Study of national and international policies, agreements, programmes and legislation pertinent to sustainable resource use in agriculture.* Unpublished LAPC report.

Lebert, T. (1994). *Land Reform and Agriculture.* Earthyear, 9:30-33.

Leroke, W. (1996) *Development as a Postmodern Condition: Towards Postmodern Development.* In Coetzee, J.K. and Graaff, J. (eds.) *Reconstruction, Development and People.* Halfway House: International Thomsons Publishing.

Madolo, M. (1998). *A Free State Perspective on Policies That Work for Sustainable Agriculture.* Unpublished report prepared for the PTW project, IIED Sustainable Agriculture and Rural livelihoods Programme, London.

Marumo, M.J. (1998). *Provincial Baseline Survey.* Unpublished report prepared for the PTW project, IIED Sustainable Agriculture and Rural livelihoods Programme, London.

McIntosh, A. and Vaughan, A. (1996)."Enhancing rural livelihoods in South Africa: myths and realities." In Lipton, M., Ellis, F. and M. Lipton (eds.) *Land, labour and livelihoods in rural South Africa. Volume 2: KwaZulu-Natal and Northern Province.* Durban: Indicator Press.

Ministry of Agriculture and Land Affairs (1998) *Agricultural Policy in South Africa: A Discussion Document.* Pretoria: National Department of Agriculture.

Ministry of Local Government and National Housing, (1996). Rural District Council Act. Government Printers. Harare, Zimbabwe.

National Department of Agriculture (1970). Act 70 of 1970, the Subdivision of Agriculture Land Act. Government Printers. Pretoria, SA.

National Department of Agriculture (1995). *White Paper on Agriculture*. Pretoria: Department of Agriculture.

National Department of Agriculture (1996). *Report on the role of agriculture in the South African Economy*.

National Department of Agriculture (1997). *Extension of Security of Tenure Act*. Government Printers, Pretoria. SA.

National Department of Agriculture (1998). *Abstract Of Agricultural Statistics*. Government Printers. Pretoria, SA.

National Botanical Institute (1998). *Rapid Appraisal of Land Degradation in South Africa*. Report prepared for the National Action Programme to implement the United Nations Convention to Combat Desertification.

Nel, C. (1998). "Focus on no-till planting". *Farmer's Weekly*, February 27, 1998:28-33.

Njobe, B. (1993). 'Sustainable Agriculture: Can we get it right?'. *Farmer's Weekly*, 3 September: 23-24.

Northern Province Department of Agriculture, (1998). Parastatal Task Team Investigation report. Unpublished.

Pretty, J. (1995). *Regenerating Agriculture: Policies and Practice for Sustainability and Self-Reliance*. London: Earthscan.

Rencken, I. (1997). Integrated Pest Management (IPM) – a model for transition from conventional to ecological agriculture. Paper presented at ECEP Roundtable on Ecological Agriculture, Zambia, 1997.

Rural Development Task Team and the Department of Land Affairs (1997) *Rural Development Framework*. Cape Town: Department of Land Affairs.

Rural Strategy Unit, (1997). Free State Mission on Rural Investment – An Action Programme for the Creation of Sustainable Livelihoods in the Rural and Peri-Urban Economy of the Free State: 1996-1999. RSU, Free State.

Scoones, I. (1998). *Sustainable Rural Livelihoods: A Framework for Analysis*. Working Paper 72. Sustainable Livelihoods Programme, Institute for Development Studies, Sussex.

Serageldin, I. and A. Steer. (1994). Epilogue: Expanding Capital Stock. In Serageldin, I. and A. Steer (eds.) 1994 *Making Development Sustainable: from concepts to action*. Environmentally Sustainable Development Occasional Paper Series No.2. Washington: World Bank.

Statistics South Africa, (1998). The People of South Africa: Population Census, 1996. Pretoria.

Statistics South Africa (1999) *Population Census 1996*. Available online at www.statssa.gov.za/census96.

Thiers, P. (1997). "Successful pest reduction policies: learning from Indonesia". *Society and Natural Resources*, Vol. 10:319-328.

Urquhart, P. (1999). *Integrated Pest Management and the Citrus Industry in South Africa*. Gatekeeper Series Number 86. Sustainable Agriculture Programme, IIED, London.

Urquhart, P. and S. Fakir. (1998). *National Survey on Sustainable Agriculture: South Africa. Synthesis Report*. Unpublished report compiled for the IIED, London.

Wildschut, A and Hulbert, S. (1998). *A seed not sown: prospects for agrarian reform in South Africa*. German Agro Action, Interfund and the National Land Committee.

World Bank (1995). *Key Indicators of Poverty in South Africa*. World Bank report.

Yeld, J. (1997). *Caring for the Earth South Africa: a guide to sustainable living*. Cape Town: WWF South Africa.

Annexe 1

The Free State Department of Agriculture Business Plan

During 1996 the Department undertook a series of strategic exercises which culminated in the production of its business plan 1996-9. This has several sections:

The need for agricultural development

This mentions the GEAR approach, the clients of the department and the need to create an efficient and effective department and parastatal, Agri-Eco.

A new approach to the public service – the Department's CREDO

This lists 8 fundamental driving forces which are central to the operationalisation of the DoA's mission:

1. Quantitative statement of objectives
2. Focus on delivery
3. Implementation assumed to be a learning process
4. A demand-driven approach
5. Decentralisation of the delivery structure
6. Use of a project management approach
7. Move to a team approach in both management and delivery
8. Role of the Department to create an enabling environment for other stakeholders, notably the private sector.

These clearly fit into the ethos of Batho Pele.

The clients and their needs

An analysis of the clients, their needs, as a basis for our programme. This must be the basis of any demand-driven approach.

Goals and objectives for 1996-9

A summary logical framework showing how an efficient and effective Department should lead to impacts on our clients, resulting in 80,000 households in the Free State generating significant wealth, employment and incomes through sustainable agriculture (livestock, gardening, dairying, etc).

The programmes and their clients

The different client groups then each have a set of tailored programmes to address specific constraints or opportunities for them. Most of these are focused on poverty alleviation, with a few more commercial, and some limited programmes addressing large-scale commercial farmers, but within the 20% of overall resource.

Transforming the Department – organisation and management

This addresses the issues around transforming public service delivery, and follows closely the approach of the White Paper on Transforming Public Service Delivery and Transformation of the Public Service.

The human resource

This shows the transformed organisational structure and the allocation of staff in that structure. This shows a change to more staff in the field, and the creation of a strategic apex.

The 3 Year Budget

This gives a three-year expenditure framework (before government requested the Medium Term Expenditure Framework). This demonstrates the commitment to an ongoing cut in budget, and a reallocation of budget to development activities. A three-year investment plan is presented, showing approximate amounts required, and the sources for that, including external sources. The benefits from the programme are extremely high, with a payback period of only three years, demonstrating that a programme targeting poverty alleviation can have significant economic benefits.

Annexe 2

The relationship of the Free State strategies to National Policy

The table below shows national policy statements, their sources, and then how the Free State department of Agriculture has sought to address these (adapted from Free Sate Department of Agriculture Policy Framework, 1998)

Policy element	Source	Free State action
Land reform	All policy	Running of Pilot Land Reform, close documents collaboration with DLA Piloting group and individual approaches Free State made major inputs to policy development
Poverty focus	All policy papers	Definition of new clients, which includes peri-urban and farmworkers Lead programmes poverty oriented Business plan addressing poverty Establishment of CPF to help those in poverty
Job creation	Freedom Charter, ANC Ag Policy, RDP	Dept refocused on poverty alleviation and target of 80,000 households over 3 years Agri-Eco refocused on job creation through SMME development. Target 25,000 jobs over 5 years.
Food security	All policy papers	Some lead programmes target food security Extension refocused to work with groups of poor clients and to consider home consumption as well as for sale

Policy element	Source	Free State action
Deregulation of marketing	ANC Ag Policy, White Paper on Ag, GEAR	Parastatal moved out of marketing Access to Marketing Lead Programme Encourage co-ops to support new farmers Free State made inputs to policy development
Rural finance and credit at market rates, but in comprehensive approach	ANC Ag Policy, White Paper, RDP	Parastatal moves out of direct lending Establishment of Access to Finance Lead Programme. Guarantee system created to encourage commercial lenders to lend without collateral Grant system created for those earning less than R1,500/month through CPF
Focus on farmworkers	ANC Ag Policy, RDP, White paper on Ag	Contracting of Rural Foundation to carry out farm productivity programme, work on labour relations and evictions
Drought management and relief – removing subsidies and changing production systems to be more risk aware	ANC Ag Policy, White Paper, RDP	Established Commission of Enquiry into Drought. Provide drought risk warning service
Farmer-driven approaches to extension	ANC Ag Policy, White Paper on Ag, new Green paper	Use of PLA approaches
Reorientation of extension officers	White Paper on Ag, new Green paper	Training of all field staff in participatory approaches, use of project management and team approach
Agricultural research – improving research for small farmers	ANC Ag Policy, White Paper, new Green paper	Establishment of Farming Systems Research Unit and decentralising

Policy element	Source	Free State action
Animal health and production – reforming to serve all farmers	ANC Ag Policy White Paper new Green paper	Vet services integrated and decentralised. Form part of local multidisciplinary teams
Natural resource management – establishing community-based approaches	ANC Ag Policy White Paper new Green paper	Adoption of LandCare approach with catchment committees
Promotion of value-adding	White paper on Ag	Agri-Eco establishing specialist advisory capacity
Reduction in public spending	GEAR	Voluntary 4% cut in DoA budget in 1996/7, large cuts 1998/9, absorbed due to restructuring. Also AgriEco.
Asset restructuring	GEAR, RDP	Restructuring of DoA and Agri-Eco. Safeguarding Agri-Eco assets Creation of effective SMME development organisation with sale of operating businesses
SMME development	GEAR, ANC Ag Policy, RDP	Agri-Eco refocused on rural entrepreneurship. Target 25,000 jobs in 5 years
Promoting human resource development	RDP, ANC Ag Policy, White Paper on Ag, GEAR	Refocusing of College and over 50% of intake now black students Creation of Non-formal Training Unit for short courses Considering integration of agricultural education providers in Free State
Integrated but decentralised government	White Paper on the Transformation of the Public Service (WPTPS)	Dept decentralised with integrated services provided at local level Agri-Eco decentralised to 8 local teams
Rationalisation	WPTPS	Completed for DoA February 1995 Also for parastatal

Policy element	Source	Free State action
Restructuring	WPTPS	Major phase for DoA completed by October 1996
Leaner and more cost effective service	WPTPS	New DoA structure of October 1996 has 800 people left with 500 people off the establishment 1997/8 budget takes off 15% of budget for capital projects Agri-Eco reduced from 855 staff in March 1995 to 269 in October 1996 and to be around 200 in July 1998
Contracting out of services through partnerships	WPTPS	1996/7 – contracted out Farm Productivity to Rural Foundation Looking at contracting out extension CPF can be accessed by any organisation/NGO which fulfils criteria
Institution-building and management	WPTPS	Decentralised DoA and Agri-Eco Developing new operational culture based on teams, participatory, project Adopted learning-by-doing approach Creating comprehensive M&E/MIS system
Transforming service delivery	WPTPS	Batho Pele Culmination of the previous so that new clients are being worked with in significant numbers, in a much more responsive manner
Rightsizing	Rightsizing	Department reduced main establishment to around 800 staff, with about 500 off the establishment (but still currently on the payroll)

As neither organisations nor resource management systems are inherently stable, adaptability and flexibility are necessary strategies for sustainability. This also emphasises the need for a degree of plasticity in policies if they are to be effective in the context of 'dynamic stability'. This is related too to the inclusiveness of the policy process.

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There are enough examples world-wide to suggest that agriculture which is pro-sustainability and pro-people is working. We now understand the concept of 'sustainable' agriculture is not confined within the farm boundary, but has strong links (and a potential to be a dynamic force within) a wider rural economy. So, 'sustainable agriculture' not only contributes to greater agricultural production, but also environmental regeneration and local economic development.

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