Agricultural Services Reform in Southern Africa

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ENCOURAGING SUSTAINABLE SMALLHOLDER AGRICULTURE IN SOUTH AFRICA

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ACRONYMS

AFU	- African Farmers Union
ANC	- African National Congress
ARC	- Agricultural Research Council
BATAT	- Broadening Access to Agriculture Thrust
CAPFarm	- Church Agricultural Project Farm
CBO	- Community Based Organisation
CDE	- Centre for the Development of Enterprise
CEC	- Committee for Environmental Co-ordination
CONNEP	- Consultative National Environmental Policy Process
CPA	- Community Property Association
CSA	- Centre for Sustainable Agriculture
CSIR	- CSIR(formerly the Council for Scientific and Industrial Research)
DEAT	- Department of Environment Affairs and Tourism
DWAF	- Department of Water Affairs and Forestry
EDA	- Environmental Development Agency
GEAR	- Growth, Employment and Redistribution
GDP	- Gross Domestic Product
GIS	- Geographical Information System
GNP	- Gross National Product
GNU	- Government of National Unity
GPS	- Global Positioning System
IFA	- Intergovernmental Forum on Agriculture
IFP	- Inkhata Freedom Party
IPM	- Integrated Pest Management
ITCA	- Intergovernmental Technical Committee on Agriculture
KDA	- KwaZulu Department of Agriculture
KWV	- Kooperatiewe Wijnbouwers Vereniging
LEISA	- Low External Input Sustainable Agriculture
LSU	- Large Stock Unit
NEDLAC	- National Economic Development and Labour Council
NGO	- Non Governmental Organisation
NP	- National Party
PPIC	- Policy Process Integrated Committee
PPRI	- Plant Protection Research Institute
PRA	- Participatory Rural Appraisal
RDP	- Reconstruction and Development Programme
SANAT	- South African Network on Animal Traction
SBDC	- Small Business Development Corporation

EXECUTIVE SUMMARY

The report adopts a definition of sustainability which includes ecological, economic and social dimensions. It concentrates on the black smallholder farming sector, which it acknowledges is very diverse and difficult to define, but which involves those producing on relatively small plots of land, with limited resources, for household subsistence or sale. It notes that poverty in South Africa is concentrated in rural areas, and that agriculture is well placed to play a role in poverty alleviation and equity improvement.

Historically, black farming has been undermined, while white farming has been supported by legislation and subsidy. This has created a highly dualistic agricultural sector, with black farmers farming small areas of land, with insufficient investment or institutional support. Subsidies to white commercial farming tended to encourage inefficiency and expansion into environmentally marginal areas; however, by the mid 1980's, the rapid decline in the South African economy had resulted in subsidies to white commercial farmers being politically unsustainable, and during the 1990's these were successively reduced. While leading to relative economic hardship for some, and contributing to cuts in agricultural employment, lower subsidies have also resulted in improved productivity, and probably improved sustainability. The current challenge is to create an enabling environment in which:

- rural poverty is eliminated,
- the smallholder and large scale farming sectors both develop sustainably.

Resource Conserving Technologies

The considerable research and development capacity of both the state and large scale sectors has been overwhelmingly orientated towards large scale farmers and within the modernisation paradigm (Pretty 1995), with its emphasis on maximising production through increased inputs. Policy is now being orientated in favour of smallholder farmers, however, the scientists and the institutions often lack the skills, experience or inclination for this new orientation. Most are still embedded in a high input/output paradigm, and understand the task as one of adapting and transferring large scale farming technologies to smallholders. Understanding of smallholder reality, with its particular complex, diverse, risk prone and dynamic nature, is typically still poor. Even in those cases where seemingly suitable technologies are being developed, promotion often follows a "Transfer of Technology" approach, rather than a more participatory process which recognises the need for local adaptation and the two way communication between farmers and extension/research.

Although sustainability is widely talked about, there remain a wide diversity of views about how this is best achieved, including the appropriate levels of technology and external inputs. This diversity of opinion is healthy - providing the different proponents engage in an open debate and share research findings. This report does not consider that high external input systems are necessarily unsustainable - this depends on the local context. However, the authors do consider that the current bias towards high input technologies, and the externalisation of some of the economic costs of certain inputs (e.g. subsidy, pollution, poisoning, increased risks) may lead to an unsuitably high use of inputs and to a neglect of more sustainable alternatives.

Much research, even within the state sector, remains commercially driven. Since large scale farmers and input suppliers are able to provide financial incentives for research, sustainable smallholder agriculture will continue to be marginalised. The state has a role in creating an enabling environment to redress this imbalance, and protect the public, this will need affirmative

interventions, regulation and incentives. Appropriately targeted donor funding can also help provide incentives for research relevant to sustainable smallholder agriculture.

Technologies for sustainable smallholder agriculture need to meet multiple objectives, not just maximum yield. Important objectives which are often ignored are:

- **reduction in risk** - often achieved through diversity, reduced external inputs and/or the ability to produce something under poor conditions,
- **labour minimisation**, particularly at peak times,
- acceptability to **women.**

Soil conservation is an example of the need for reform of Government programmes. The existing 'top-down' and punitive approach is ineffective in promoting sustainable practice amongst smallholder farmers. Legislation and policy require revision in order to enable a process in which:

- underlying causes of soil erosion are addressed,
- technical and social issues are combined,
- farmers are empowered to choose and adopt technologies and approaches appropriate to their local circumstances,
- schemes in communal areas are negotiated - so that stakeholders understand and participate in the the management plan, and have a vested interest in making it work,
- punitive sanctions are used only as a last resort.

Sustaining local institutions

Smallholder farmers need supportive local institutions to:

- manage resources held or used in common,
- provide a secure framework for land access and fixed investment (including security against robbery and violence),
- provide cost effective linkages to information sources, service providers and markets,
- undertake advocacy to improve the policy environment,
- provide inter-household support (e.g. sharing of labour, implements, draught power) and learning (both informal 'discussions over the fence' and the slightly more formal such as farmer study groups).

Institutional links between the smallholder and service providers are weak. Government institutional links to the farmer are fragmented between the different tiers of Government, with their different competencies. The third tier, local Government, should be the most relevant and accessible to smallholders. However, in many areas it is under-resourced, particularly in appropriately skilled and visionary people. Recent reorganisation of government at all levels, including the processes of bringing together formerly separate white and homeland departments, adds to the current confusion. The future role of tribal authorities remains unclear. In some areas Government authority is fairly limited with de facto power held by individuals or institutions, sometimes of a criminal nature. Violence and insecurity can prevent the development of sustainable farming enterprises.

Where smallholders are trying to access government support for programmes, such as land reform, few smallholders possess the information, linkages or capacities to lobby the array of departments involved. The formation of local farmers associations, sometimes strategically supported by an NGO, is a means by which some farmers are trying to ensure that their needs are met. Capacity building for farmers associations is thus considered a priority. NGOs are well

placed to do this, but are constrained by shortage of funds, and in some cases loss of key personnel to government and the private sector.

To improve links between smallholder farmers and service providers, a partnership model is proposed, in which different stakeholders join together to implement a jointly agreed set of activities and to overcome bureaucratic and political blockages. In the land reform process political contacts are useful for 'fast tracking' projects that would otherwise be caught in a cumbersome process. But while it is politically important to get land reform projects started quickly, it is doubtful whether the fast track process is sustainable. In the medium term improved linkages will need to be built at a decentralised level, in order to improve farmer coverage, to be sensitive to the local context, and to keep transaction costs down.

Within the land reform programme, farmer organisation is needed to use the purchased land sustainably and productively, especially when common property and communal management elements are also involved. Some noted weaknesses are:

- Entry is generally poorly regulated, in that relatives and tenants are able to utilise the resource beyond the levels agreed upon for the member household.
- Size of the user group is often determined by the price of the desired farm, and the number of R15,000 grants needed to purchase it. This is exacerbated by current restrictions on land sub-division, and can results in unworkably large groups pooling their grants to purchase collectively. Only in some cases is a household contribution to the purchase of the land required (i.e. in addition to the government grant - such contributions are considered necessary to reinforce the sense of ownership and encourage more sustainable use of the resource).
- The authority of decision making structures is often tenuous, and poorly supported. This makes it well nigh impossible for them to enforce the rules or rectify inadequate regulations. Rules do not establish clearly enough the conditions for collective decision making and rules are often ambiguous and unenforceable under the given circumstances.
- The relationships between the user group and Government agencies, legal and customary authorities have generally not been clearly defined.
- Mechanisms for negotiation, mediation and conflict resolution are weak or non-functional.

Creating an Enabling Environment

The policy environment affecting sustainable agriculture is undergoing rapid flux, mainly as a result of wider political changes in the country. Greater concern for the environment, and awareness that subsidies are unsustainable and inefficient, are also contributing to change. Agricultural policy has been particularly affected by change at the national level, it was a National Party portfolio during the Government of National Unity, and has only recently become an African National Congress responsibility. Written agricultural policy at both national and provincial levels remains at the stage of aims and principles, with little development of strategies and priorities.

A range of initiatives are underway to develop environmental policy across a range of sectors. Thus far tangible results of these initiatives are limited. Water policy has however developed significantly, with plans for increased charges, including charges for catchment management and resource conservation. The practicalities of implementing these and their impact is currently untested. Forest policy has developed to include a more holistic approach and decentralisation of regulation.

There is concern that the economic reform programme, GEAR, will concentrate on increased production, principally through intensification, with less regard for longer term sustainability or equity objectives.

Capacity and practical experience at all levels is likely to be a limiting factor in the implementation of emerging policies, and the sustainability of the longer term result. Although the technical capacity of Departments of Agriculture, particularly those from the previous white large scale areas, is high, there are major constraints:

- understanding of the practical realities of smallholder farming is limited,
- farming systems approaches are undermined by continued dominance of narrow disciplinary expertise,
- there is a lack of experience of, and sometimes commitment to, demand driven and participatory approaches,
- research and extension are insufficiently linked and this is exacerbated by the national remit of the Agricultural Research Council (ARC) becoming separated from provincial research and extension.

This lack of capacity is likely to be felt particularly acutely by smallholders benefiting from the land reform programme, and it is here also environmental degradation will be most obvious and politically sensitive. NGOs, including organisations such as local churches, may be able to play an important facilitating role in community organisation, both for the management of communal property and in the development of smallholder supply and marketing co-operatives.

Access to input and marketing services by smallholders is often weak, increased servicing of smallholders by existing large scale farmers co-operatives is possible, although the mechanism for encouraging this needs further exploration. Government intervention may be needed where the markets fail to reach isolated or poorly organised smallholders and one-off grants to existing businesses for opening depots in smallholder areas might be the most sustainable approach. In some circumstances outgrower schemes, such as that of the sugar industry, can provide a range of services to smallholders, but affirmative action is necessary to ensure smallholders are empowered in the process.

The extension of credit to smallholders as recommended by the Strauss Commission through the increased use of post offices, incentives to provide services in isolated areas and risk sharing between the state and private lenders could increase sustainability by encouraging smallholders to invest in the productive capacity of their farms. There is also scope for supporting and building on existing loan and saving institutions like 'stockvels'.

Recommendations

Extension approach

Fundamental to sustainable and productive use of agricultural resources is the role of the farmer as an active learner. Extension services should strive to enable the farmer to become a more effective learner: a learner about the farm environment and the innumerable complex relations that s/he must manipulate successfully in order to produce sustainably, and a learner about the wider environment of neighbours, information, external resources, regulation and markets. Methodologies include:

- adult education approaches,
- farmer learning/study groups (successfully supported in the past in the white farming

sector),

- farmer to farmer methods (small scale experimentation and farmers sharing their results with other farmers),
- participatory methods (utilising PRA and PLA tools to promote analysis by farmers themselves),
- agricultural information in an appropriate form (mother tongue literature, television, radio, etc.).

Research-Extension-Farmer Linkages

Improved communication in both directions between farmers and research and farmers and extension is needed to promote:

- the development of appropriate technologies for sustainable smallholder production,
- the re-orientation of extension staff from technology provider to facilitator.

Improved linkages are also needed between research and extension. At the policy level, there has been, and continues to be, little attention paid to linkage creation. Extension is generally poorly equipped in terms of staff skills and financial resources for identifying and communicating technology needs, and for managing local level interventions. It is recommended that provincial departments of agriculture identify linkage mechanisms and structures at both the farmer-extension and research-extension interfaces. Joint initiatives between provincial departments, farmer associations and the ARC would have the effect of, not only introducing more appropriate research to farmers, but would assist in relationship building and the acquisition of skills by farmer and extension officer alike. In this regard, greater effort on the part of decision makers within the ARC, provincial Government and NGOs is urgently needed.

More sustainable Land Reform

For sustainable land reform, it will be vital to improve the institutional arrangements both in support of, and within land gaining communities. Effective collaboration between supporting agencies is vital, and in many cases this has not been the norm. In order to collaborate effectively, they will have to learn not only to develop common purpose and objectives, but also compatable methodologies.

Within the land gaining communities, the development of effective structures needs to be facilitated, both by training and mentoring, to develop the necessary capacities, and also by ensuring that an appropriate degree of externally and internally mediated regulation is accepted as a condition of the granting of state assistance. An important aspect of this may be promoting acceptance of a user charge for the use of common property natural resources, in order both to facilitate maintenance of the resource, and to promote equity within the user group.

Beneficiary communities should be kept as small as possible, and where for reasons of efficiency or choice, larger groups (more than 20 households) acquire a common property resource, the modalities of their utilising it within smaller user sub-groups should be explored well in advance. This will enable the development of clear and secure relationships between specific agricultural resources and individual user households (even if these are shared resources).

The relationship between off-farm income generating opportunities and incentives for on-farm investment is likely to be an important factor in sustainability. It needs to be recognised that the

environment within which farmers manage their land, including both community and external incentives for sustainable use, is likely to be as important a determinant of sustainability as the production potential of the land and whether it is capable of providing a complete livelihood.

Incentives for soil and water conservation

A new programme for soil and water conservation is needed. Where possible soil, vegetation and water management needs to be devolved to local farmers and communities. Management rules need to be negotiated with various stakeholders, based on an appropriate mix of enlightened self interest and respected authority.

Appropriate incentives are needed to encourage conservation, and appropriate technical advice is needed to complement indigenous knowledge and existing practices. The inappropriateness of 'top-down' regulation of stocking rates, using static LSU calculation, to smallholder conditions needs to be more widely recognised. To promote investment in soil and water conservation technologies, a new system of subsidies for appropriate soil and water conservation measures need consideration and pilot testing. Appropriate user charges, like those being developed for water, need to be developed in some circumstances. Subsidies and charges are justifiable because of the externalities involved and the notion that the land and water are national resources.

NGO Involvement

The role of the NGO sector in agricultural development should be encouraged with increased funding, focused thorough the development of collaborative partnerships with government agencies, which enable sharing of complementary skills. Priority areas for NGO involvement are:

- facilitation of participatory planning (e.g. for land reform projects),
- capacity building for farmers' organisations and community organisations managing natural resources,
- promotion of alternative approaches to mainstream agricultural thinking, thus challenging and stimulating the mainstream actors.

Farmer organisation capacity building

Capacity building for community based organisations which represent resource-poor farmers is a priority in order to overcome some of the constraints to sustainable smallholder agriculture such as disempowerment and high transaction costs. There is potential for more support of locally based savings and loans institutions, and the possible linking of these to the commercial sector.

Local Government

Institutional capacity building at local government level is needed in order to create a truly enabling environment. Policy/operation mismatch is all too common and a lack of adequate communication between top heavy national structures and under resourced local level structures is a prime contributor.

Public-Commercial sector complementarity

The bias against smallholders and low input systems of agriculture by the commercial sector research and extension needs to be redressed by public sector interventions. Within the input, credit and marketing sectors, strategic public sector interventions are needed to overcome market failures in servicing smallholders. Such interventions need to be timebound and designed to encourage, rather than compete with, sustainable alternatives. Where the commercial sector is servicing smallholders (e.g. the sugar cane industry) specific interventions may be needed to empower smallholders. There is also a need for the development of specialised extension and marketing services where opportunities exist for the production and export of organic produce

Appropriate training

A training strategy to equip South Africa with a core of competency in sustainable smallholder agricultural development is needed. Priority should be given to:

- Improve cross-disciplinary skills, i.e. technically competent agriculturalists need to improve their skills in participatory techniques, social and economic analysis; social scientists need to improve their understanding of agriculture and the natural environment.
- Training for policy specialists looking at wider sustainability and social organisation issues.
- Practical experience "study tours" for rapidly rising black professionals in the Departments of Agriculture on the realities of smallholder agriculture.

Appropriate cross-disciplinary training is needed at all levels - from grassroots extension worker to senior manager. Some of the training can be non-formal through programmes such as experience exchange and study visits to neighbouring countries. In some cases twinning arrangements between institutions in South Africa and elsewhere may enable suitable sharing of skills.

The curricula of agricultural courses need to include:

- specific study and practical experience of smallholder production systems,
- training in participatory techniques, community development etc.,
- emphasis on sustainability rather than just maximising production.

Broadening curricula in this way may need closer practical links between agricultural colleges and the smallholder communities they should be trying to serve.

Improved co-ordination

Improved co-ordination of the relevant public sector departmental activities, especially at province and sub-provincial level is needed. The establishment and smooth functioning of development councils of the NEDLAC type at provincial, district and local levels is one way to address this challenge. The Provincial Development Council in the Western Cape provides a good institutional model, this has specialist sectoral committees, of which agriculture is one, comprised of representatives from the public and private sectors, labour and non-governmental organisations.

Partnerships between institutions with complementary competencies are needed to enhance resource pooling and overcome bureaucratic bottlenecks. Such partnerships are most likely to be effective if they are structured around specific tasks, with clearly defined time frames and outputs.

This report is one of six country studies, the synthesis of these studies is available as a book: Living Farms - Encouraging Sustainable Smallholders in Southern Africa. By Martin Whiteside, published by Earthscan, London 1998.

1. BACKGROUND

1.1. Introduction

This is one of a series of six country reports on technologies, institution, services and policies in support of sustainable agriculture in Southern Africa. The other countries being covered in the series are Zambia, Namibia, Botswana, Zimbabwe and Malawi. The reports are part of the second phase of a project entitled Agricultural Services Reform in Southern Africa, funded by the British Government's Department for International Development (DFID). Following a literature review on sustainable agriculture in the region undertaken in Phase One, these reports follow field reviews of experience in the countries included in the study. The project aims to facilitate the exchange of experiences, and particularly 'best practice', in the region, and its final phase will see the publication and widespread distribution of a book identifying the key issues and lessons learned.

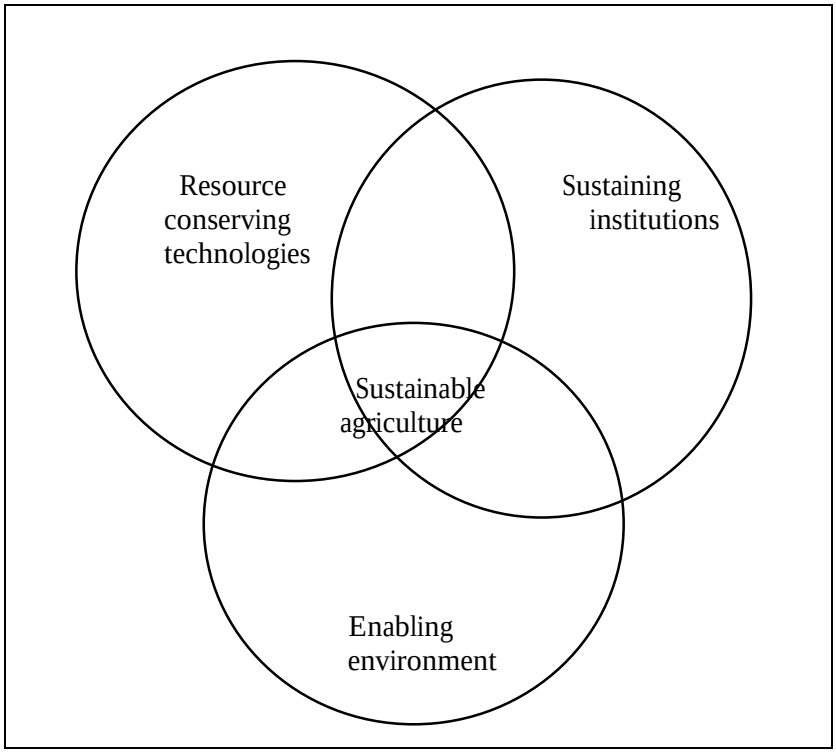
Sustainable agriculture is defined as 'agriculture which meets today's livelihood needs without preventing the needs of neighbours or future generations from being met'. This definition implies a combination of dimensions:

- ECOLOGICAL - the productive capacity of the natural resources on which agriculture depends need to be conserved even if it is changed (e.g. from bush to fields).
- ECONOMIC - the farming system needs to remain financially viable, both for the farming household and the wider community.
- SOCIAL - both in terms of equity and in meeting the aspirations and the cultural traditions of communities.

(See Whiteside *et al.* 1996 for a longer discussion on the definition of sustainable agriculture).

These different dimensions mean that development programmes and policies need to include many disciplines and different levels of intervention. This is a challenge to professionals trained in the more conventional reductionistic scientific paradigm. The key message of the sustainable agriculture approach is that development interventions must look at all these levels in combination. This report is structured around the three interlocking conditions considered necessary for sustainable agriculture:

Fig 1.1 Conditions for Sustainable Agriculture



(Pretty 1995)

Much of the focus of this report will centre on smallholder farming systems, since this is clearly a sector which will receive greater Government focus in the years ahead - and where sustainability is a key issue. The term 'smallholders' is a relative term and not easily defined; in this report it is used for individuals and households who either farm under a traditional communal basis, or on relatively small plots of land. They may produce for the market or household subsistence, and agriculture may make up a major or minor part of overall household livelihood. Most are poorly resourced, with little access to capital investment and poor access to services, markets, credit etc. Smallholder agriculture tends to be complex, diverse, risk prone and dynamic. Smallholders tend to make use of common property resources such as grazing, firewood, water, wild foods and medicines, and smallholder livelihoods can become unsustainable if these are mis-managed; these common property resources tend to be under-valued by external planners. The vast majority of smallholders are black rural inhabitants who have been disadvantaged during the apartheid period.

1.2. The South African Agricultural Sector

South African agriculture continues to be characterised by a racially skewed distribution of economic assets, support services, market penetration, infrastructure and income. The racially skewed distribution of land is a primary indicator of the past policy environment:

- some 60, 000 white large scale farmers control 102 million ha of agricultural land

- 1.2 million black agriculturalists share access to about 17 million ha of land.

While the outcome of Apartheid and pre-Apartheid era policies on South African society are generally well known, the specific impacts of these policies on agricultural development are less widely understood - and yet the future for sustainable agricultural production cannot readily be understood without reference to this history.

1.2.1. The history of Land and Agriculture Policy (pre 1994)

The relationship between the people of South Africa and the land has evolved under successive colonial and white minority governments. Hut taxes, the opening up of markets for agricultural produce for the mines and the need for labour on the mines all affected the dynamics of agriculture during the 19th Century.

A number of associated factors led to the replacement of sorghum by maize as the dominant crop of the Territories in the first decades of the century. Increasing migrancy meant that ever less labour was available for cultivation and protection of crops from birds and contributed to the adoption of mixed maize/pumpkin/bean cropping patterns. Many households lost draught power following the East Coast fever scourge, which decimated African cattle herds on the east coast in the first two decades of the 20th century.

Until the end of the 19th Century, a highly skilled class of black farmers were the primary producers of staple summer grains, and kept large herds of livestock. Many white landowners, particularly in the Transvaal, Free State and Natal, derived their income from the land in the form of payments in kind from black peasant farmers, who utilised the land on a share-cropping basis. This pattern started changing towards the end of the 19th Century. O'Meara (1983) has noted that the transition to capitalist production that occurred in South African agriculture in the years 1890 to 1920 was one that was driven 'from above', in which 'the estates of white "frontier" landlords were transformed into capitalist farms, while the rent-paying, but economically relatively independent, black peasants were almost universally reduced to wage labourers and/or labour tenants'.

The Natives Land Act No 27 of 1913 was the first concerted legislative attempt to force Black farmers off the land, limiting them to a series of 'Native Reserves', which at that time covered 8% of the total land area. The political and economic objective of "reserve" policy was to maintain labour reserves, in which a degree of food self sufficiency could be retained, with households depending on migrant remittances for supplementary cash income.

In the period following the 1913 Land Act, impoverished black peasants were forced into the labour market, and one indicator of this is the increase in the black agricultural labour force in the Transvaal which grew by 75% between 1918 and 1930. O'Meara (1983) notes that "farmers strove to limit their workers' access to land and make them solely dependent on wage labour".

In 1925 the Native Taxation and Development Act imposed a heavier tax burden on all Africans in the Territories or 'Native Reserves' introducing a uniform flat rate poll tax of £1 on all males over the age of 18, in addition to the hut taxes and other levies. Some of the poll tax revenues went towards the establishment of Departments of Agriculture in the Territories. These Departments were typically directed by whites, and staffed at a field level by Africans trained at agricultural schools. Termed 'demonstrators', their task was transfer of modern agricultural technology, which included modern ox drawn implements, crops and cropping patterns (including mono cropping) and livestock management practices. These scientific approaches do

not appear to have made a significant differences to agricultural production in the short term, and economic and demographic trends were far more significant in transforming agricultural output and the balance of trade of the homelands. However, they were the beginning of a trend which has ever since discouraged intercropping and other traditional practices, and which has resulted in the promotion of modern 'green revolution' technologies, with their high dependence on external inputs.

The Great Depression brought with it a severe depression in prices for agricultural products, and this in turn led to the introduction of subsidies, price support and single-channel marketing systems. These mechanisms made access to the market more difficult for those black producers still on the land, as they were designed to favour the enfranchised white minority.

The range of measures intended to integrate black South Africans into the economy of the country as wage labourers in the agricultural, mining and industrial sectors were all too successful. As access to land, and to the means to make a living from it were increasingly limited, black South Africans found it ever more difficult to pay the hut taxes that were levied by the Government and to find the basic needs for their survival. Increasingly the more economically active sought wage labour to support their families. Under these circumstances, 'the household members with the greatest comparative disadvantage in wage employment would be allocated to subsistence production, so that labour with a greater comparative advantage in wage employment could specialise in generating income' (Low, 1986). This meant that the women (whose mobility was more restricted by both the pass laws and the care of children), the less educated, the physically disabled and the aged were left to till the soil while the more able and mobile migrated to employment in the cities.

After 1948 this trend was further reinforced by the National Party Government. Migrancy was actively encouraged as a way of retaining access to cheap labour, without having to deal with the economic costs of housing wage-earners and their dependants near their places of work or the political pressures of an ever-growing black urban community. Hostels for male migrant workers provided them with such basic shelter that none would ever consider a hostel a home. The relationship between the migrant and the land became ever more alienated and agricultural skills were lost, or did not develop.

Under the white government, agriculture and natural resource management in the "white" dominated agricultural sector of South Africa was administered from Pretoria by a national Department of Agriculture which pursued policies of price support, input subsidisation and generous disaster assistance towards agriculture. Support for agriculture was politically important for the National Party regime, which relied heavily on the white rural vote to retain power, and the power of institutional lobbying by the white large scale farming sector was considerable:

> *Government transfers to the agricultural sector (white commercial farmers) through marketing assistance alone amounted to about R15 million in 1931, and R31 million a year, on average, between 1948 and 1966. About the same amount is estimated to have been transferred to the agricultural sector from consumers. In 1967, the amount spent by marketing boards to subsidize about 100 000 (white commercial) farmers was almost double the amount spent to educate more than 10 million blacks.*
> (Binswanger, H. Unpublished World Bank paper).

Public sector and private sector support services were attuned to addressing the technical, economic, financial, institutional and human resource needs of the capital intensive farm enterprise model. Subsidies and tax breaks concealed the relative uncompetitiveness of numerous white large scale farmers(Van Zyl, Kirsten & Binswanger, 1996). On the other hand, there are case studies which highlight the social and economic efficiency of small-scale agriculturalists -

Hatch (1996) found that communal cattle farming can generate 10 times as many livelihoods per hectare as large scale (white owned) cattle farms.

In the years of economic sanctions, the Government also placed a high priority on national food security, subsidising the production of crops which could be imported more cheaply, and financing the development of strategically important commodities and technologies such as the use of sunflower oil as a diesel substitute.

In the 1950's the Native Authorities Act of 1951 and the Promotion of Bantu Self-Government Act No 46 of 1959 opened the way for the formation of the 'homelands' (Mbongwa, van den Brink and van Zyl, 1996). Although self-governing states, the homelands were in reality, a continuation of the native reserve system and the homeland administrations did little to improve access to research and technology development, product development, market information and marketing instruments, education and training, extension services, economic and social infrastructure, irrigation, rural credit and financial instruments.

The homeland agricultural policies were not intended to enable black farmers to compete effectively with white farmers and were often driven in a top-down fashion by largely unsympathetic white bureaucrats. 'Betterment planning' was widely implemented in the homelands in this era, and was intended to promote productive conservation. Betterment planning involved moving rural people into closer settlements on less productive land (villagisation), while reserving land with the highest potential for cultivation. Grazing reserves were also established, intended to promote more controlled and rational use of this resource. In vast areas betterment planning uprooted people in the name of progress, disrupted their relationship to the land and placed them in 'townships' which were distant from their fields. Following decades of betterment, villages that were 'bettered' demonstrate clearly the failure of the approach - fields typically lie fallow, and where they are cultivated, productivity is low. Soil erosion, overgrazing and other forms of environmental degradation are common. The lessons from betterment are of great significance today, as planners engaged in the land reform process impose 'top down' plans on rural communities in the name of cost effective service provision. In general the environment for black smallholders before 1994 was strongly dis-enabling resulting in:

- many households farming unsustainably small units of land,,
- often the least able members of households/communities being engaged in agriculture,
- lack of institutional support in practically every way including lack of tenure security, lack of stable community organisation and lack of services leading to under-investment in the land and in its sustainable and productive use.

A key issue to be discerned from South African history is that for quite different reasons in the homelands and the white agricultural sector, the sustainability of production processes was more dependent on the political environment than the natural environment. This fact has important consequences for current and future policy interventions.

1.2.2. Democracy and the status of the agricultural sector

With the adoption of a new constitution in 1994, came the establishment of provincial governments with far greater, albeit incomplete, control over provincial matters. Government portfolios were divided into either National or Provincial competencies, with most agricultural functions classed as provincial competencies. However even within this model, some agricultural

functions were still deemed to be of a "national" nature (e.g. phytosanitary regulations). A National Department of Agriculture still oversees aspects of agriculture within South Africa, and guides the policy environment.

One important influence during the first two years of the new Government was that the National Party (NP) held the agriculture portfolio at national level in the Government of National Unity (GNU) and in six of the nine provincial governments. The agricultural policy priorities of the National Party tended to promote the status quo in agriculture, with some incremental shifts in the direction of broadening access to services by the black majority. In 1996 the NP left the GNU, and African National Congress (ANC) ministers are now responsible for agriculture in most provinces. However in KwaZulu-Natal the Inkatha Freedom Party (IFP) holds the agriculture portfolio, and in the Western Cape it is held by the NP.

At a national level, various high level Government forums exist to oversee the co-ordination of agricultural policies and services. These include the:

- Parliamentary Standing Committee on Agriculture,
- Intergovernmental Forum on Agriculture (IFA) at Ministerial level,
- Intergovernmental Technical Committee on Agriculture (ITCA) attended by Directors General and high ranking provincial agricultural officials.

Outside of agriculture, the political transformation was also accompanied by a change in development policy. The Reconstruction and Development Programme (RDP) launched soon after the election of the GNU, introduced a developmental paradigm shift which focused on people centred, demand driven planning and implementation processes. It also highlighted the need to engage in development partnerships between the public sector, the private sector, and non-governmental and community based organisation sectors. However, the application of such policy shifts to the agricultural sectors is encountering specific political, economic, institutional, social-cultural and human resource constraints and challenges.

Today many Black South Africans have come to regard agricultural production as a last option for survival, and urbanisation is proceeding at a frantic pace. The enthusiasm of rural people for the land reform programme of the GNU probably owes more to their desire for secure tenure (including for residence), and access to a diverse resource base, than to a wish to derive the major part of their income from farming. A wide range of measures will be required to promote the sustainability of Black rural communities in South Africa.

In the large scale farming sector the trend has been towards ever larger units of production, increasing corporate ownership and a shrinking class of landowners and skilled managers. Another trend has been increasing crime against white farmers, including stock theft, robbery and murder. Lack of security has been associated with the abandonment of more productive farming enterprises (e.g. sheep farming) and transformation of large areas of prime grasslands to timber production. The deep social, economic and cultural divisions of rural South African society are thus having an impact on the social and economic sustainability in the large scale agricultural sector.

Agriculture's contribution to the GNP has diminished steadily this century and now accounts for about 4-5% of GNP (National Department of Agriculture, 1996). This trend can be expected to continue. In recent years support measures have been removed (direct and indirect subsidies, import tariffs, price controls, etc.) and South African agriculture is currently some of the least subsidised of its major competitors. This removal of subsidies has had a number of impacts on the large scale sector:

- for some, farming has become ever less profitable, while others have been able to react positively to the newly liberalised policy environment and maintain or increase profits.
- Average real farm profits have increased since the mid 1980's and multi-factor productivity analyses show considerable increases in productivity, which has offset reduced subsidies and worsening terms of trade(van Rooyen *pers comm.*).
- Artificially high producer prices stimulated environmentally bad farming practices, observations indicate that agricultural production systems are currently more harmonised with natural conditions than fifteen years ago: today farmers cannot afford to produce outside the natural comparative advantage parameters without being severely penalised in terms of natural risks and low yields (van Rooyen *pers comm.*). The reduction of crop production on more marginal lands since the mid 1980's is an indication of farmer response to changing conditions.

While agriculture's contribution to GNP is falling, agriculture nevertheless remains an important and influential sector for employment and overall growth in the economy. Agriculture's contribution to economic growth cannot just be measured by farm production - upstream and downstream income and employment linkages and multipliers are very important. For example, while the contribution of the agricultural sector to GDP in 1988 was 5.3% with 13.6% of economically active people employed directly, the total impact of this sector on the economy was measured as 12.89% of GDP, and 24.4% direct and indirect employment (van Zyl and van Rooyen, 1990). Furthermore, van Zyl & Vink (1988) have shown that the agricultural sector has the largest employment/production multiplier coupled with an average income/production multiplier (i.e. any increase in the agricultural sector will result in the creation of more job opportunities than are created by an increase in output of the same order in the industrial sector). The importance of agriculture in economic growth is shown by the fact that projected GDP growth has been reduced from 2.5% to 2% as a result of a heatwave in January 1997 which damaged crops. A poorer maize crop alone is expected to reduce GDP growth by 0.3% (Stilwell, *pers comm.*). Thus agriculture has a major role to play in the overall South African economy as well as a more specific impact on rural poverty alleviation.

1.3. Poverty

Poverty in South Africa is particularly acute in rural areas:

- 53% of South Africa's population are rural inhabitants,
- 75% of the poor reside in rural areas,
- 81% of the ultra-poor are rural inhabitants,
- Female - headed households in rural areas are a high poverty risk social group(SALDRU, 1994).

Lack of access to agricultural resources is a feature of rural poverty:

TABLE 1. The importance of agriculture to different societal strata in South Africa

	All rural South Africa	Household ranked by Consumption Groups of 20% (Quintiles)				
		Quintile 1 (ultra poor)	Quintile 2	Quintile 3	Quintile 4	Quintile 5 (richest)
Percentage of households in crop and/or livestock production	36.8	42.3	42.7	32.1	21.9	22.0
Percentage of households with access to land	26.2	27.5	28.1	25.8	18.4	28.1
Average size of land per capita used last year (hectares)	4.6	0.3	0.4	0.8	4.5	63.7
Percentage of available land communally owned	69.2	84.5	70.0	65.6	55.0	15.5
Percentage of available land privately owned	26.8	13.5	26.0	29.1	44.0	70.6
Main source of water for croplands (% households)						
rain/river irrigation	92.7	97.4	98.3	94.6	78.4	45.6
borehole, dam, municipality	5.8	2.3	2.2	2.2	12.5	46.5

(RDP Office, 1995)

It is significant from Table 1 that :

- 42% of the rural ultra-poor and poor rely to some extent on crop or livestock production,
- access to land and water are major constraints,
- access to land for the poorest segments of the rural population is primarily access to communal land.

Great strides in poverty alleviation are unlikely until an understanding of rural dynamics is achieved. The Government's draft strategy on rural development does not give grounds for optimism. The Centre for Enterprise and Development (CDE) which is a privately-funded,

public interest policy research and advocacy organisation commented on the document as follows :

> *"The rural strategy is an inadequate companion to the government's draft urban strategy document and a very poor step-cousin to the new Green Paper on Land Policy... it is a 'wishlist' of what the authors would like to happen in rural South Africa. The document fails to identify or define the elementary building blocks or even the terms for an analysis of the rural areas. It fails to capture the factual information that is available about rural South Africa; it does not identify the key policy choices that face the government in deciding on a new approach to the rural areas. And it certainly does not provide a practical strategy for national action. CDE is convinced that there is little possibility that sustained and positive development will actually occur in the rural areas as a consequence of this document and its approach.*
>
> *This is a well-meaning but ill-founded piece of work which cannot be amended or improved. The government must go back to the drawing board and ensure that this time the officials involve a wider range of expertise within and outside the state in order to produce a satisfactory strategy" (CDE, 1996)*

Rural livelihoods, perhaps especially for the poor, are made up of a whole range of components, many of which are dependant on common pool resources such as water, fuelwood, gathered foods and medicines, thatch, wildlife and building materials. Although these components are outside the conventional definitions of agriculture, they are profoundly affected by agriculture and other land use practices, and therefore must be taken into account. A thorough understanding of both the social and environmental dynamics of rural areas is needed in order to develop strategies for sustainable poverty alleviation. Sustainable and profitable smallholder agriculture can only be one component in a strategy for eradicating rural poverty, however it is a vitally important component. The wrong policies could exacerbate poverty and cause long term damage to the resource base of rural communities and ultimately the country.

1.4 Conclusion

Sustainable agriculture has ecological, economic and social dimensions. The smallholder farming sector is very diverse and difficult to define, but involves mainly black households, producing on relatively small plots of land, with limited resources for household subsistence or sale. Smallholder sustainability requires a combination of resource conserving technologies, sustaining local institutions and an enabling environment.

Historically black farming has been undermined while white farming was supported by legislation and subsidy. This has created a highly dualistic agricultural sector with black farmers farming small areas of land with insufficient investment or institutional support. By the mid 1980's the rapid decline in the South African economy had resulted in subsidies to white large scale farmers being politically unsustainable. Reductions in subsidies, while leading to relative economic hardship for some, have also resulted in improved productivity and in all probability improved sustainability. Agriculture is more important in South Africa than its contribution to GDP suggests because of its role in employment and the contribution it makes to the livelihoods of the poorest households. Poverty in South Africa is concentrated in rural areas and agriculture is well placed to play a role in both poverty alleviation and equity improvement.

2. RESOURCE CONSERVING TECHNOLOGIES

2.1. Introduction

In South Africa, the dominant discourse concerning agricultural technologies is set within the modernisation paradigm (see Pretty 1995 for a critique) with its emphasis on maximising production, generally by increased external inputs. There is currently pressure to increase emphasis on smallholder farmers and on sustainability. However at the same time major research institutions have experienced state funding cut-backs of 30-40%, leading to science councils trying to raise additional money through commercial research and cost recovery, which tends to orientate them away from smallholders. This section does not examine all the technologies that are being developed, or that are needed, for smallholder farmers and their sustainability. Instead, by looking at a number of areas some more general lessons are identified.

2.2 Traditional Knowledge

In South Africa, indigenous knowledge systems are poorly understood and their integration into modern agriculture is practically non-existent. However a few NGOs and universities in the former homelands have recognised the value of traditional methods and have sought to find ways of both developing and incorporating them into mainstream agricultural practise. The CSIR has also recently embarked on a project with the University of the North in the Northern Province, to identify successful traditional rural technologies, some of which include agricultural processing technologies. The study makes use of field workers to compile an inventory of the different types of existing technologies with the aim being to identify useful methodologies and develop these for wider use.

In the past there was little interest by scientific institutions in traditional crops, however now some such as the ARC and the Centre for Low Input Agriculture and Development, an NGO in Kwa-Zulu Natal, are undertaking research into these, including Bambara groundnuts and cowpeas. There is a growing recognition that such crops, many of which have a high natural variability, are well suited to smallholder conditions. These can be a useful component in smallholder mixed farming, they can reduce the risk element associated with, for example, drought and disease and they also generally grow well with lower external inputs.

The Department of Agriculture has undertaken to collect traditional crops and maintain them in gene banks as part of its commitment to the Southern African Development Community's Plant Genetic Resources Committee (Moss, 1994). This is a positive step which needs to be extended to the identification and collation of traditional farming methods and other indigenous knowledge systems. A national programme is necessary to highlight the importance of indigenous knowledge and facilitate greater co-ordination in an area in which many small and isolated investigations have been carried out, but where general understanding is still too limited to create a critical mass for a change in paradigm.

2.3 Breeding and Biotechnology

South Africa is unusual in the region in having a relatively sophisticated biotechnology capacity in addition to its crop and animal breeding capacity. In 1991/92 about 3% of the national research

and development expenditure of some US$1.01 billion, was spent on biotechnology. A quarter of this expenditure was on projects using recombinant DNA techniques (Komen, Cohen and Offir, 1996). The main contributions to biotechnology research expenditure (average of years 1987, 1989 and 1991) have been Government (43%), with the ARC and the CSIR being major contributors to this Government component, higher education (29%), business (26.1%), and non-profit organisations (2.1%) (Komen *et al.* 1996).

Agricultural biotechnology such as crop varieties that are more disease resistant, heat or drought tolerant, and livestock breeds with higher resistance to diseases and parasites, are major areas of research. In this regard the ARC has some successes, ranging from wheat cultivars that are resistant to the Russian wheat aphid and wilt resistant guava root stocks, through vaccines and diagnostic tests for disease detection in livestock to transfer of Botrytis-resistant genes into table grapes.

Most of the advances in breeding and biotechnology have been aimed at the large scale farmer. Highly sophisticated techniques such as genetic engineering are considered by some as automatically detrimental to sustainability and to the resource poor. However, some biotechnology programmes, like that of the ARC and CSIR, to enhance the nitrogen fixation capacity of plants, so that they are less reliant on external inputs, may bring sustainable benefits to smallholders. Similarly biotechnology programmes that are examining technologies beneficial to small scale food processing may also bring benefits to smallholders (ARC Annual Report 1996).

While most of this technology is aimed at the large scale farming sector, there are spin-offs for smallholders - for example, hybrid maize cultivars, bred ostensibly for large scale farmers, are also widely used on smallholder farms. However, new developments are more likely to benefit the large scale farming sector, as research and development focuses on their specific needs.

The relationship between breeding/biotechnology and sustainability has policy dimensions. While research tends to be used to develop crops/livestock requiring higher external inputs or which can grow in more marginal environments - thereby increasing the risk of environmental damage, it can equally be used to develop crops/livestock requiring lower external inputs or having lower environmental impact. The deciding factor is not so much the technology *per se* but the economic and regulatory environment within which it is developed and applied.

South Africa does not have a direct government initiative on biotechnology, however both the Department of Trade and Industry and the Department of Science and Technology are looking at how the biotechnology industry in South Africa can be stimulated. The Genetically Manipulated Organisms Bill is aimed at ensuring that transgenic crops are produced and used safely in external environments. So far, however, there has been little emphasis on the use of biotechnology specifically for smallholder priorities

2.4 Integrated Pest Management

In South Africa, Integrated Pest Management (IPM) has been successfully applied in the export fruit industry, partly in response to stringent European environmental standards, and has resulted in considerable reduction in production costs (Joyeen Isaacs, *pers comm.*). However, lack of access to resources, the absence of incentives and inadequate training of farmers, severely hamper the adoption and development of effective IPM regimes by small scale farmers.

The ARC's Plant Protection Research Institute (PPRI) is involved in the development of pesticides which are aimed at being not only effective, but also safer, selective, bio-degradable, environmentally acceptable and economically viable. They are investigating the feasibility of utilising the natural chemical defences of plants in order to overcome the problems associated with pesticide usage such as insect resistance, environmental pollution and ecological imbalances. Botanical pesticides are likely to cause a much slower build-up of resistance in insects due to the presence of several active ingredients in the pesticide.

The projects undertaken by the PPRI presently include the investigation of the potential of the Seringa tree as a source of botanical pesticide - with its extracts exhibiting anti-feedant and growth inhibition effects on insect pests, such as the African bollworm and diamond-back moth - both severe pests of the brassica crops in South Africa (PPRI, 1995). Affordable, alternative methods to control the diamond-back moth are urgently needed since these crops are staple vegetables for disadvantaged rural communities. Small scale producers can ill afford the high prices of insecticides and are more likely to be exposed to health risks when handling highly toxic insecticides, because of their limited access to protective clothing and because illiteracy limits access to information about safer application. Other projects include the control of stem-borers in summer grain crops grown by smallholder farmers, with the emphasis being on biological and cultural control.

The ARC recently initiated three smallholder projects which train potential smallholders in various aspects of sustainable vegetable production. It was incumbent upon the trainees that upon receiving training on pest control methods, including the preparation and use of plant extracts as insect repellents, they then train and assist others in their communities. Evidence of successful farmer to farmer extension is reported both in the number of "new" farmers and also in increased vegetable production per farmer.

While such projects represent a serious attempt to re-orientate research in order to accommodate post-apartheid development imperatives, it is fair to say that the agenda may have changed but that the approach generally has not. Therefore, although the emphasis is now on smallholder problems (often defined by scientists), the approach is one of the scientists developing technical solutions, which then need to be transferred to the smallholder. This is an improvement on the previous orientation, but more change is still needed to achieve synergy between smallholder farmers, researchers and extension workers.

2.5 Animal Traction and Tractor Technology

Tractor technology has spread widely among large scale farmers in South Africa, not only because of its own technical merits but also through subsidisation such as tax breaks and cheap credit. Within the homelands, some heavily subsidised government tractor ploughing schemes acquired many tractors and reduced the utility of draught animals. Within the last three years, policy shifts have lead to the transfer of ownership of these tractors and many former employees of the Department of Agriculture are now owner/operators. A lack of finance and maintenance skills in the rural areas have resulted in a decrease in the number of serviceable tractors and this has been exacerbated farmers 'resistance to paying market related prices for ploughing services.

Smallholder farmers are today faced with the problem of a second-hand tractor market in which smaller models are not only scarce but also highly priced. Various pilot initiatives, including involvement of the ARC's Institute for Agricultural Engineering, to develop small and appropriate tractor technology that could be purchased and maintained by smallholders

themselves at low cost, are underway (Heyns, Blanche, Kotze and Swanepoel, undated). Similar initiatives have been tried in other countries in Southern Africa with, so far, little success.

Some large scale farmers have moved to reduced tillage regimes, mainly to reduce tillage costs, but also to reduce soil structure damage and to conserve water. There has been little progress in introducing reduced tillage to the smallholder sector.

Animal traction still provides an affordable and sustainable alternative for many smallholder farmers. However, one problem with animal traction is the lack of access to harness and implements (Stilwell, *pers comm.)* Animal traction has generally not received the support and encouragement it deserves from the agricultural establishment. In 1993, the South African Network of Animal Traction (SANAT) was formed in order to promote and facilitate the exchange of information and knowledge on animal traction and thereby improve research, development, training and policies concerning the use of draught animals. SANAT is linked to regional efforts such as the Animal Traction Network for Eastern and Southern Africa.

At the formation of SANAT it was recognised that there was no clear understanding of the extent to which animal traction was still used in South Africa. Consequently, a survey was conducted in 1994 to improve understanding and to promote smallholder farm productivity and rural livelihoods through the use of animal power for transport and ecologically sustainable crop production. The SANAT survey team estimated that 40-80% of remote rural families engaged in smallholder farming, make some use of animal power for transport or cultivation (Starkey 1995). The survey found that black farmers commonly view animal power as being old fashioned, backward and outmoded (especially young farmers). Most farmers, irrespective of scale, want to own a tractor, and only farmers who have incurred financial losses as a result of purchasing tractors are more cautious. The survey showed that tractors were increasingly being used and that it is wrong to think of animal traction in isolation - both animal and mechanical traction can be used in a complimentary manner in a farming system (Starkey 1995).

2.6 Soil Conservation

Erosion has always been a problem in South Africa and there is evidence of traditional approaches to soil conservation (see for example box 2.6) . Generally, South Africa's soils are fragile and easily eroded by wind or water. Shortly after the First World War, South Africa experienced severe drought and its own 'dust-bowl' phenomenon. At that time, there was no regulatory system in place to address soil conservation. The impetus to tackle soil erosion on a national scale arose after a Senate Select Committee report on Droughts, Rainfall, and Soil Erosion in 1914. The Committee recommended the establishment of a single centralised administrative system that would engage in public awareness and implement conservative land management practises. It recognised the problem to be caused by humans, and therefore recommended measures that were protectionist in nature, i.e. to keep humans out of problematic areas.

Box 2.6 - Venda Terraces

Investigation into the terracing practices used by Venda people in the Northern Province has shown that these systems have long been used, and that their primary purpose appears to be the conservation of fertile soils. In this relatively densely settled, well watered area of fertile apedal soils, land is allocated to individuals, and "the right to cultivate is *effectively* inalienable, and is inherited from father to son" (Critchley, W. & Netshikovehla, E. 1997). Using participatory methods, researchers investigated farmers 'perceptions of the problems that they were addressing by building stone terraces in their hillside fields. They described the problem in terms of "loss of fertile soils" (ibid), and most noted that this loss was being arrested by the construction of the terraces and associated measures (grass strips, contour ploughing, construction of diversion ditches above fields, check dams in gullies, etc.). Despite the fact that ancient examples of terracing exist nearby, much of the terracing is recent, and could be a response to increasing pressure on the land by a growing population.

The development of modern soil conservation techniques can be traced back to the early 1940's when South African soil scientists were strongly influenced by technologies developed in response to the 'dust-bowl' phenomenon of the United States. Soil conservation approaches and techniques were thus imported into South Africa and formed the basis upon which present-day soil conservation technologies have been developed.

The first soil conservation legislation was passed as the Soil Conservation Act of 1946 and this made provision for subsidies to farmers in order to protect soils. It also allowed the Minister of Agriculture to expropriate land in cases where degradation was severe, or where public works needed to be constructed, so as to minimise soil loss or siltation. Under the Act, soil conservation committees were established. These committees were made up of farmers nominated by their representative associations, and who essentially played a dual function: one of policing and the other of advising farmers and the Ministry of Agriculture. Success was limited, because farmers were not prepared to institute legal proceedings against fellow farmers, and also members were only compensated for their subsistence and travel expenses and not their time commitments. In 1969, another piece of legislation was promulgated (Act 76) which retained some of the functions of the soil conservation committees but also established an Inspectorate to deal with contraventions of the previous Act. This legislation resulted in severe tensions developing between the farming community and the government as the latter was becoming increasingly less tolerant of the demands placed on it by farmers who were dictating soil conservation policy.

In 1983, the Conservation of Agricultural Resource Act (Act 43) was passed, this allowed the government to intervene before or after soil erosion occurred. Act 43 retained the previous state initiated soil conservation schemes, committees and subsidy programmes, but at present soil conservation committees are only functional in parts of the Western and Eastern Cape, KwaZulu-Natal and Northern Province. The future of these committees will be reviewed as the Conservation Act is scrutinised in the new agricultural policy process initiated by the present Minister of Agriculture. At issue here is the incorporation of smallholder black farmers into these committees, as soil conservation committees were, and are currently, only represented by white farmers.

In 1971, when the self governing territories were formed, soil conservation functions were devolved to homeland governments. This often meant that South African soil conservation legislation was no longer enforced and yet an alternative system was not necessarily developed. The formation of the homelands system created a dual system of soil conservation and land management in South Africa, each with a distinct history and administrative systems, which are

now being brought back together.

Soil conservation measures in homeland areas were based on top-down and technocratic approaches, which were generally unsuccessful. In many instances, the South African government tried to institute soil conservation in association with 'Betterment Schemes' in communal areas, with disastrous effects. They resulted in widespread landlessness, poverty and resistance. These techniques, which were essentially developed for freehold farming, were ill-suited for communal areas. In such areas, communal grazing was practised because it was a rational choice - the tremendous cost of infrastructure (fences, water points etc.) meant that the only viable option was to share these resources. Yet the authorities propagated the prejudice that African farming techniques automatically contributed to soil erosion, and sought to impose measures aimed at discouraging African farmers from practising traditional methods. Technocratic policies did not take into account traditions and social factors, and in particular the different values and purposes attached to livestock rearing by black smallholders compared to that of white large scale farmers.

Today the provinces currently administer certain soil conservation functions under Act 43. They are allocated a budget for resource conservation and may at their own discretion allocate part, all or none of such funds for soil conservation. The Free State for example, has not allocated any money to soil conservation for 1997/98. A number of conclusions can be drawn from these past approaches :

- Soil conservation has historically been driven by a protectionist approach, rather than as an integral aspect of farm design, management and practise. By the very nature of the legislation, the overriding emphasis has been on policing and punitive measures to institute soil conservation. This is clearly the case with smallholder agriculture in the former homelands. There is growing recognition that a primarily protectionist approach with its command and rule style, which was enshrined in past Soil Conservation Acts and strategies, have not really addressed the causes of soil erosion.

- Past soil conservation technologies were not developed or applied in a multi-disciplinary manner. More attention is now being given to social, political and economic policy environments that influence the manner in which land-users manage soil. This represents a significant step and an admission by research institutions that not all underlying causes can be resolved by technical means - often real solutions are found at the institutional and policy levels.

- There is growing recognition that many solutions are best found by farmers themselves, and that State research, policy and legislation need to create an enabling environment for farmers to select and pursue the best methods for given circumstances. However, as Act 43 still remains intact, these lessons will be limited until a more participatory and enabling piece of legislation is enacted.

- Modern techniques such as aerial/satellite photography and GIS can enhance soil conservation and land use planning - and they can be used in the smallholder farming sector. However since their application is usually driven by top-down technocratic approaches, there is a danger that local participation, knowledge and social issues are not given adequate weight. There is only limited experience in combining sophisticated technology with bottom up approaches like Participatory Rural Appraisals (PRAs), and even less in enabling local communities to use and be empowered by the new technology.

Case Study - Resource Conservation and the Mdukatshani/CAPFarm Trust

Background

The Mdukatshani Rural Development Project which is run by CAPFarm Trust (originally the Church Agricultural Project) was established in the Tugela Valley within the Msinga District in 1975. Mdukatshani is situated on privately owned farm land on the border of tribally held lands, and is 2,500ha in extent. It has a long common boundary with tribal lands to the east, and a shorter border across the Tugela River to the north. The other boundaries are with labour tenant farms. The area as a whole receives marginal rainfall (450 mm) and is highly drought prone.

Agricultural service provision in the area was strictly divided in accordance with apartheid practice prior to 1994. In the white owned areas the Regional services of the Department of Agriculture Extension office in Estcourt were generally available on demand. In recent years staff of this office paid annual visits to Mdukatshani in response to requests by the manager of the project, Rauri Alcock. In the adjoining tribal areas, the Extension Officers of the former KwaZulu Department of Agriculture were supposed to provide a service, which included supplying advice and marketing assistance to irrigation farmers, providing dipping services, and supporting the activities of the Ikhwezi Cooperative at Tugela Ferry, the local agricultural input supplier. However, the standard of this service has been severely criticised by both black irrigation farmers and Mdukatshani staff. Despite the integration (on paper) of the two services since 1994 little appears to have changed.

Resource Management and Conflict at Mdukatshani

The aims and objectives of CAPFarm Trust are largely social, and include the establishment of "models for agricultural settlement" and the provision of resources "to the residents of neighbouring communities" (which are within the tribal area). Before being purchased for the Project, the farms had been labour tenant farms, but previous evictions meant the farms were uninhabited at the time.

The history of the project is a history of conflict - from its early days to the present it has felt the inevitable impact of being situated in the midst of a society in which resource shortage, deprivation, conflict and violence are endemic. Rights of access to, and use of the land is often in dispute, and there are a number of parties who have claims of different sorts to the resources legally owned by the Project. As such, negotiation over resource use has been a key function of the Project staff, and one that has been fraught with difficulty. Following the death of project founder Neil Alcock in 1983, resource sharing arrangements with neighbouring livestock owners unravelled, and attempts by his widow to retain stability were met with death threats. Fences were destroyed, and the grazing resource was depleted and degraded. Social relations are still strongly influenced by the threat or possibility of violence.

In the early 1990's the area was subjected to a severe drought. Efforts by Rauri Alcock to reintroduce a rational resource sharing regime were based upon careful negotiation, and placed the responsibility for the maintenance of the system upon the resource users.

Mdukatshani has evolved a unique and highly successful approach to resource sharing with the wider community. The provision of resources to the residents of neighbouring communities has centred around access to winter grazing, thatching grass, firewood and medicinal plants. In the tribal area livestock deplete the grass cover and browse heavily on the trees and shrubs throughout the summer. Without any winter reserve, livestock was often in poor condition by the arrival of the spring rains.

Most of the Mdukatshani rangeland lies on a plateau above the Tugela Valley. In conventional terms, it has been assessed as requiring between four and eight hectares per Large Stock Units (LSUs) (i.e. the farm is capable of carrying between 312 and 625 head of cattle). In fact, 15 tenant households run 180 cattle on a 825 ha portion of the farm all year-round. Mdukatshani provides its neighbours with access to the remaining 1675ha of its grazing lands each winter, in exchange for co-operation in the regulation of the use of the resource, and in its maintenance.

The use of the grazing resource is negotiated with the user groups, under the authority of the Chief Indunas ("tribal Prime Ministers") of the two neighbouring Chiefs, Mcunu and Mthembu. These Chief Indunas have also been trustees of the overall project since its inception. Livestock owners utilising the grazing are organised in seven user groups, each of which has access to a defined, camped area of the grazing reserve. In the autumn they organise work teams of 10 persons per day to repair the fences and burn fire breaks. Once this had been completed, the cattle are herded into the grazing reserve, where they remain until the spring rains have come (usually from May until October). Goats also browse the area, and play a significant role in controlling the encroachment of thorn scrub, as do duiker and other antelope endemic to the area.

The Mdukatshani veld is well balanced in terms of tree/shrub/grass ratios. By the start of the winter grazing season it is richly grassed with palatable species, whereas the grass cover in the adjoining veld is poor, and visibly less diverse. Heavy non-selective grazing by the large herds of cattle utilise the resource very effectively by the end of the winter, so that both palatable and unpalatable species are prevented from becoming moribund. The cycle of very heavy grazing in the winter, followed by complete rest in the summer, has had the effect of promoting the growth of palatable and nutritious species.

Effective regulation of this system is vital. The reality of Mdukatshani is that regulation by Government officials has not been a viable option, and the Soil Conservation Act is not applied. One has only to drive through the area and observe the fields of *cannabis sativa* to realise that the law, even when backed up by armed police, has only a very limited ability to regulate people's economic utilisation of the natural resource base. Regulation must thus be based upon a finely tuned mix of enlightened self interest and authority. In this case study an active programme of community involvement has promoted awareness among the resource users of the benefits of co-operation within the resource sharing schemes. Awareness alone has, however, proved insufficient when authority has broken down. The active involvement of the tribal authority and the NGO in enforcement of the rules has been essential. In Mdukatshani, authority is only respected in this manner when there is general consensus that they will contribute to people's well being.

Lessons learnt:

- Effective conservation needs to combine technical parameters with local social/political possibilities.
- Local arrangements, such as grazing management, need to be **negotiated** at a local level so that the stakeholders understand the system and have a vested interest in making it work.
- Regulation must be based on a finely tuned mix of enlightened self-interest and authority.
- Regulation by stocking rate, based on static estimates of LSUs, are not particularly helpful in highly variable environments. Heavy grazing, but for a limited time, can help maintain palatability and forage diversity.

2.7. Alternative farming movements

The concern for sustainable farming has given rise to a range of movements promoting specific brands of sustainable agriculture. Some of these are motivated and guided by a specific philosophy or approach. In principle these different approaches are helpful as part of the broadening of experiences of sustainable agriculture. Where organisations promoting these different approaches are open to dialogue much can be learnt.

Some of the main sustainable agriculture movements active in South Africa are:

Sustainable Agriculture Movements in South Africa

PERMACULTURE - A system of farming working with, rather than against, nature (Mollison, 1991) using a combination of a gradual build up of productive perennial plants, mulching for weed control, alternative technologies that generate and save energy and moderate use of machinery as appropriate. Various NGO's, many linked to the Permaculture Association, are trying permaculture techniques in South Africa, particularly for vegetable growing. In most cases the success of such systems and their ability to generate sustainable agricultural systems have not been adequately and independently evaluated.

ORGANIC AGRICULTURE - Organic agriculture is not widely practised in South Africa, as the demand for organically grown products is very small and standards for monitoring such production are not well developed. Although organic agriculture has been suggested as offering a profitable system for smallholders, who could export their produce to European markets, very little has been done to develop markets for the organic produce of small scale producers. Similarly little support is being provided by research and extension service to enable such producers to deal with the pest and disease management problems of organic production.

HOLISTIC RESOURCE MANAGEMENT - a system of on-farm decision making in which the wider "holistic" environment is taken into account. In Southern Africa Holistic Resource Management has been most used in grazing management. Short duration, high impact grazing similar to that of herds of wild animals are promoted, which in certain circumstances seems to support higher stocking rates as well as veld improvement. So far this is being tried by a very few large scale farmers.

LOW EXTERNAL INPUT SUSTAINABLE AGRICULTURE (LEISA)- the external or bought inputs into the farm are kept to a minimum to:

- minimise environmental damage
- minimise risk in an uncertain environment
- minimise cost for small farmers..

The simple reduction of external inputs does not by itself automatically improve sustainability. For instance in certain circumstances cutting artificial fertiliser application can reduce crop growth, leading to reduced organic crop residues being returned to the soil and less soil cover with a resulting increase in erosion. Therefore a reduction in artificial fertilizer may need to be accompanied by other techniques such as agroforestry to maintain soil fertility. LEISA involves research into technologies that enable external inputs to be reduced without damaging the environment, do not require excessive labour and give an acceptable yield. An example of an organisation developing this approach is the Centre for Sustainable Agriculture (see box).

Case Study - Centre For Sustainable Agriculture (CSA)[1]

The Centre for Sustainable Agriculture (CSA) is an NGO which aims to provide a technical support service to resource poor farmers primarily in the Western, Eastern and Northern Cape. The Centre operates a research farm near Malmesbury, 65 km from Cape Town. Animals and plants are bred under low input conditions, field tests conducted, and integrated low external input farming systems are being developed. The Centre serves as a training and information centre.

The Centre has good contacts and relationships with a number of farmers and their associations and there is constant movement of genetic material, both in and out of the Centre. Recently it has attracted mainstream research interest and ARC researchers have interacted with the Centre both to assist it and also to verify technological advances.

Projects include :

- An agro-forestry and alternative cropping programme using nitrogen fixing trees and shrubs which have resulted in increased yields of small grains, despite the poor, sandy, leached soil. In most cases, no supplementary fertilizer was applied. Nitrogen fixing trees or shrubs are directly sown onto the soil in rows about 300 mm apart, and at 3m intervals. Leguminous crops are grown in the 3 m strips between the trees for a season or two, after which grain crops are sown on a rotational basis with leguminous crops. After the crops in the strips have been harvested, sheep are allowed to graze both the crop residues and the fodder shrubs. Throughout the summer months the trees and shrubs are browsed by the sheep increasing the capacity of the land.

- The establishment of an arboretum and seed bank to ensure the availability of propagation material of promising tree species and other plants that are unavailable commercially.

- A programme examining the natural resistance of different sheep breeds to internal parasites which are becoming increasingly resistant to anthelmintics. The Damara breed showed the best immunity and a small flock was built up which thrive without being kraaled, are excellent browsers and require virtually no supplementary feeding. Lambing percentage is 120, an excellent figure under these conditions. The Damara have been cross-bred with Black Head Dorper ewes and the resistance to internal parasites was conferred to their progeny. This raises the possibility of resistance being bred into existing sheep flocks by means of using a parasite resistant Damara ram, and then allowing in-line breeding for a number of generations.

- A pig breeding programme developed a four-way cross breed, known as the Sandveld Red, which thrives on low cost rations. The breed is cold and heat tolerant and sows need not be confined in crates when furrowing. No supplementary heating is required for the piglets, despite temperatures dropping to as low as -4^{o} C in winter. Unlike most modern breeds, the pigs do not suffer from stress and because of their pigmentation sunburn is not a problem - the pigs produce a lean, fairly fine grained red meat.

Issues:

[1] Based on interviews with Gavin Armstrong, CSA Manager, ARC personnel and the November 1995 edition of Farmers Weekly.

- There are opportunities to develop technologies appropriate to smallholders which require low external inputs but can produce acceptable yields.
- Because such technologies attempt to fit in with the local environment, rather than modify it, they are likely to be quite location specific and require adaptation by smallholder farmers in different locations.
- In order to have a significant impact, organisations like CSA need to improve their linkages with farmers associations and other institutions working with farmers (the case study in section 3.6 examines CSA's attempt to do this)

2.8. Conclusions

The considerable research and development capacity of both the state and commercial sectors has been overwhelmingly orientated at large scale farmers, and within the modernisation paradigm, with its emphasis on maximising production through increased inputs. Input suppliers, who conduct and fund research, and provide information/advice to farmers and extension workers, have a particular vested interest in high inputs, and create a bias in their favour. Some of the external costs of high inputs, such as environmental damage, agricultural worker poisoning and increased risk (when farmers are compensated by Government in a disastrous year) are not borne by the farmer, creating an additional bias in favour of higher inputs. Since much research remains commercially driven, even within the state sector, with large scale farmers and input suppliers able to provide the resources, sustainable smallholder agriculture will continue to loose out.

Although sustainability is widely talked about, there remains a wide diversity of views as to how this is best achieved, including the appropriate levels of technology and external inputs. This diversity is healthy, providing the different proponents engage in an open debate and share research findings. High external inputs are not always unsustainable, this depends on the type of inputs and the context in which they are used. Indeed the judicious use of external inputs can add to sustainability in appropriate circumstances. However the bias in favour of higher inputs may lead to the development of lower input alternatives being neglected. The state needs to redress the bias by affirmative action in favour of sustainability as well as by creating the enabling environment, through incentives and regulations, to redress this balance and protect the public. Appropriately targeted donor funding and NGO programmes can also help.

Policy is now being orientated in favour of smallholder farmers, however the scientists and the institutions often do not have the skills, experience or inclination to do this effectively. Understanding of the smallholder reality, with its particular technical, economic and cultural dynamics, and its high diversity, is in many cases still poor. Many technologies developed by research institutions are not appropriate to smallholder farmers. Important objectives which are often ignored are:

- reduction in risk - often achieved through diversity, reduced external inputs and/or the ability to produce something under poor conditions,
- labour minimisation, particularly at peak times,
- acceptability to women.

Variability in conditions between farms often requires much local adaptation of such technologies. Where seemingly suitable technologies are being developed, promotion often follows a "Transfer of Technology" approach rather than a more participatory process. New technologies, including those developed by biotechnology, can be either beneficial or harmful to sustainable smallholder agriculture, depending on the context within which they are developed

and used..

Soil conservation legislation and policy needs to be revised to make it enabling of a process in which:

- underlying causes of soil erosion are addressed,
- technical and social issues are combined,
- farmers are empowered to choose and adopt technologies and approaches appropriate to their local circumstances,
- schemes in communal areas are negotiated so that stakeholders understand the management plan and have a vested interest in making it work,
- punitive sanctions are used as a last resort.

3. SUSTAINING LOCAL INSTITUTIONS AND INSTITUTIONAL LINKAGES

3.1. Introduction

The institutional groupings in South Africa continue to be notoriously distinct from one another. Broadly, they may be described as a public sector (national, provincial and local), a non-governmental sector which can further be divided into organisations for gain (private sector) and those not for gain (facilitating and implementing bodies), and a community based sector. Furthermore there are large gulfs between the institutions active in white large scale farming areas and neighbouring black smallholder areas.

Smallholders have institutional requirements often quite distinct from white large scale farmers. For example smallholder farmers need supportive local institutions to:

- manage resources held or used in common,
- provide a secure framework for land access and fixed investment (including security against robbery and violence),
- provide cost effective linkages to service providers and markets,
- do advocacy to improve the policy environment,
- provide inter-household support (e.g. sharing of labour, implements, draught power) and learning (both informal "discussions over the fence" and the slightly more formal such as farmer discussion groups).

A major challenge facing Government in reaching its policy goals is the transformation of the interface between those demanding services and those supplying them. It is here that local institutions can contribute substantially to the creation of greater sustainability, and the core issues addressed in this section concern these local institutional structures and their linkages.

3.2. The Role of Local Government

In the public sector domain, insofar as agriculture is concerned, the institutional framework presents both confusion and opportunity with a range of departments and tiers of government coming into play:

TABLE 2. Public Sector 'Road Map'- the complex web of departments which confront smallholder farmers

	Land Affairs	**Agriculture***	**Water Affairs & Forestry**	**Env Affairs***	**Trade and Industry***	**Scien and**
National	-Policy -Regulatory Framework -Strategies Allocations -Budget - M/E	-Policy -Regulatory Framework -Budgeting -Design Instn. Framework -M/E	-Policy -Regulatory Framework -Strategies Allocations -Budget - M/E	-Policy -Regulatory Framework -Strategies Allocations -Budget - M/E	-Policy -Regulatory Framework -Strategies Allocations -Budget - M/E	-Policy -Regul Frame -Strate Alloca -Budge - M/E
Provincial	-Adapt Strategy -Set Opn. Targets -Manage Implementation	-Design Prov. Strategy -Manage Implementation - Budgeting -Manage Support Services - Extn; Research; Training, Finance	-Adapt Strategy -Set Opn. Targets -Manage Implementation	-Adapt Strategy -Set Opn. Targets -Manage Implementation	-Adapt Strategy -Set Opn. Targets -Manage Implementation	-Adapt -Set O -Manag Imple
Local	MANAGEMENT, DESIGN AND IMPLEMENTATION OF INTEGRATED ECONOMIC DEVELOP					

* These Departments are particularly affected by concurrent national and Provincial legislative competence

This institutional fragmentation into specialised public sector departments is a distinct disenabling factor from the local institutional perspective:

- Few local farmers organisations possess the information, linkages or capacities to lobby the array of departments involved in accessing land (Department of Land Affairs), agricultural support services and research (Departments of Agriculture; Arts, Culture, Science & Technology; and Education), finance (specialised sub-department in the Department of Agriculture), promoting enterprise development (the Department of Trade and Industry), and water (Department of Water Affairs and Forestry.)

- Although local government is the primary lever of sustainable, integrated planning and development in a people-centred, demand driven developmental approach, this third tier of government is far from fully operational in respect of financial, technical, staffing and infrastructural capacities. This is a huge constraint for three principal reasons :
    1. it is the tier of government which is closest to grassroots, farmers organisations.
    2. it is also the tier of government which has been entrusted with the responsibility to design and manage the implementation of an integrated local economic development plan.
    3. in rural areas, a system of Transitional Rural Councils is operative and the nomenclature is a vivid description of the uncertainty and incapacity that presently prevails.

The introduction of local government structures has in many cases reduced the role of groups such as the 'Civics' (local, usually ANC aligned, community organisations established during the years of resistance to apartheid which acted as alternative governing structures) and tribal structures. While many former Civic leaders are now local government councillors, in some areas where local Civic organisations still exist, personal power struggles effect their effectiveness and ability to work with local government. The future role of the tribal system in the governance is undecided. Conflict between local government and tribal chiefs is likely over issues such as land planning and allocations (Giddings, 1996). All of these issues affect the problems of governance at this tier and must be resolved if sustainability is to be addressed.

There is therefore at present a tension between the theory of an enabling policy framework based on demand-driven, people centred development principles and the reality of the complex institutional framework which is far from transparent or user friendly to smallholder farmers. Even if the institutional issues can be resolved, the sustainability and effectiveness of this level of government will undoubtedly be affected by funding. A tax on land, as a means of raising rural local government revenue, and as a policy instrument to complement a non-confiscatory land reform programme (Department of Land Affairs, 1997) has been much debated since before the 1994 elections. The Commission of Enquiry into Certain Aspects of the Tax Structure of South Africa (known as the Katz Commission) set up a specialist sub-committee to investigate the question, which in principle supported the imposition of a land tax as a source of revenue for rural local authorities. In 1996 it published a discussion document which recommended that a land tax be levied at the primary level, so as to be consistent with property taxes levied by urban local government structures. It is also argued that rural local authorities have no other tax base to

exploit, and that without adequate revenue, rural local government cannot "assume its rightful place in democratic society" (Department of Land Affairs, 1997).

The 1997 Discussion Document on Local Government (Ministry of Local Government and Housing, 1997) also notes that 'financial weaknesses are amongst the greatest obstacle (sic) to the development of effective local government', and notes that 'most (municipalities) are not viable because of their limited tax bases'. It is assumed that a local level of administration will counter mismanagement of land tax revenues, reduce administrative costs and improve compliance. While this is likely to be the case in the long term, a lack of capacity will hinder the implementation of a land tax in the short term.

The impact of a land tax on sustainable agriculture in general, and on smallholders in particular, needs careful consideration. Much will depend on the level of the tax and how it is assessed in relation to different land holding sizes, different land qualities and different land uses. By reducing the value of land, it might enable black farmers in the land reform programme to purchase more viable holdings. If well structured, the tax could also provide incentives for conservation, but if poorly structured it could provide incentives to bring marginal land into production, with consequent risks of degradation and force the very poor off the land, with further undermining their livelihoods.

3.3. Local Farmers' Associations

Farmers' associations have grown considerably since 1993/94. The membership base of these organisations is diverse, and includes low-income farm workers with practical farming expertise, household members from informal settlements who practise subsistence agriculture, unemployed persons of varying age-groups and gender, and a small group of smallholder farmers who engage in a modest level of commercial farming, targeting primarily local neighbourhood markets. Associations are without doubt severely under-resourced in respect of technical, administrative, human and finance resources - but they fulfil the very important functions of facilitating input supply, training, resource pooling, lobbying (i.e. for land reform) and networking (inter-community and intra-community).

The primary stimuli for the formation of many farmers' associations have been land hunger and the realisation that the provision of adequate support services is better promoted by a collective voice. In the case of land hunger, land redistribution is based on a willing buyer, willing seller principle, and the cost of agricultural land on the open market often renders the asset unaffordable to the vast majority of targeted beneficiaries. This in turn has driven farmers' associations to identify state and municipal land that could be accessed by members, and has resulted in the lobbying of local, provincial and national government departments with a certain degree of success (albeit that the process has proved a lengthy, time-consuming and cumbersome one).

A certain degree of formalisation has accompanied the growth of these farmers associations. Such formalisation has occurred in two domains :

- intra-farmers 'association constitutions, rules and procedures
- inter-farmers 'association alliances.

The formation of provincial level farmer unions to represent farmer associations has enhanced considerably their institutional power. For example, in the Western Cape, representation on strategic bodies like the Land Bank, the Provincial Development Council, Wesgro and the Goedgedacht Agricultural Resource Centre followed the formation of African Farmers Union (AFU).

While the trend to establish local farmers ' associations is a countrywide phenomenon with initiatives evident in most provinces, some have been more successful than others. The practical impact of these successes has been locally profound, and they have facilitated :

- land audits of state and municipal land holdings,
- facilitation of land transfers and restitution claims,
- improved interfaces with development agencies, public sector and other technical service providers to access and quality control the level and type of services provided.

In some cases (Eastern Cape and Kwazulu Natal) these farmers 'associations have merged with the existing white large scale farmer unions, at least with respect to provincial apex bodies. These mergers are an interesting development. On the one hand they could result in resource pooling of expertise, administrative infrastructure and encourage deracialisation of contested issues like land reform. Equally, they could result in the superficial glossing over of profoundly different interests, hasty bureaucratisation and delinking from grassroots initiatives and interests. The latter has profound implications for equitable and sustainable agricultural development, since the thorny issue of equitable access to appropriate agriculture resources may not be adequately addressed.

For many farmers 'associations, NGO support may well be a key component in equipping them with necessary skills and linkages; this is exemplified in the Western Cape where NGOs have assisted in conducting social audits of state and municipal land holdings on behalf of farmer associations. Land transfers of public sector holdings involve tough and tricky negotiations which are highlighted in the case study:

Case Study - Klipfontein

Klipfontein is a state farm of 280ha. It is situated in prime deciduous fruit territory in Villiersdorp, relatively close to Franschoek. The land had not been farmed for years and was identified as an ideal site for access to farm-workers by the Vyeboom Farmers Association. A delegation of representatives drawn from the local association, the provincial apex body, the African Farmers Union and the Rural Foundation, an NGO, met with the Minister of Land Affairs, to discuss the possibility of transferring a few state farms to beneficiaries from historically disadvantaged households. Klipfontein was one of the farms discussed. The Minister concurred that the process complied with present land reform policy, and agreed in principle. An action plan was agreed upon and the process was set in motion.

The transfer of State land is a national competency and responsibility is entrusted with the Minister of Land Affairs, agricultural strategies and support services, on the other hand, are provincial competencies. The complicating factor in the Western Cape was that the respective Ministries are managed by politicians from different political parties. The project became a subtle battlefield.

Eventually a project management team representing all the stakeholders involved - including the Departments of Land Affairs and Agriculture, the local beneficiary groups who had established a development trust and the NGO - was formally constituted under the management of the provincial Directorate of Land Affairs. Representatives from INFRUITEC, a specialist commodity institute of the Agricultural Research Council, joined the project at a later date.

The entire process thus far has lasted close on two years, with much labour intensive pre-project design, institutional building work such as land searches, resource inventories, the design of beneficiary selection criteria, identification of potential beneficiaries, field-testing of various legal options and workshops held with beneficiaries etc. The land transfer is not yet complete. The enterprise's land use plan has not yet been developed into an organisational system with inclusive structures and activity schedules. However the land is being used by the beneficiaries in the meantime.

Lessons learnt:

- the process for acquiring land is complex, involving political as well as bureaucratic and technical issues,
- currently good political links are needed to "fast track" the process,
- organisation into a farmers 'association and strategic links with an NGO can be a way for smallholders to be empowered in such negotiations,
- a team involving all stakeholders can be a way of breaking through deadlocks,
- the current process is too resource intensive for land reform to reach the scale needed; simpler processes are needed,
- more assistance will need to be concentrated at the post acquisition phase to support sustainability.

In some cases farmers 'associations have played a very practical role, such as brokering the access of smallholder farmers to commodity associations or (large scale) farmers co-operatives. Sometimes the pack sizes in which inputs such as drenches are sold (e.g. for a minimum of 100 animals) make them unsuitable for smallholders. There is some evidence that pressure from farmers 'associations, along with the identification of potential new markets, has contributed to the packaging of more appropriate quantities. There are also examples of farmers associations, through farmer field days, lowering the transaction costs of contact with commercial input suppliers and product buyers - both for information transfer and sales..

Capacity building with smallholder farmers 'associations is a priority. Building capacity from the bottom up 'is probably the most sustainable, to avoid the situation experienced in other countries in the region in which an increasingly articulated and well resourced apex has become de-linked from the local associations. NGOs are well placed to play a key role in such capacity building.

3.4. Non Governmental Organisations

The NGO sector, which played a significant role during the years of opposition to apartheid is experiencing a crisis with:

- a need to redefine roles in the new South Africa,
- a loss of senior staff to Government and the private sector,
- a shortage of funds, as many donors have switched from funding NGOs to funding the Government, and there is as yet limited funding from the South African Government to NGOs.

NGOs can play an important role in providing technical support and services to impoverished households and community based organisations. These latter constituencies are often not reached by conventional service providers from the private and public sectors. The spectrum of services offered by NGOs encompasses a diverse mix including information, technical and organisational skills training, strategic planning, facilitation of access to resources, support for lobbying and networking activities.

NGOs represent an important reservoir of knowledge on how best to forge development partnerships with resource poor households and community based organisations. They exhibit distinct comparative advantages over their private and public sector counterparts in that :

- they tend to be more participatory,
- they tend to be more sensitive to local demand side complexities and culture,
- they tend to be more flexible development partners for CBOs.

It is argued that a vibrant NGO sector is needed to support and empower smallholder farmers and their associations. The current crisis faced by NGOs highlights the very real tension between an enabling policy environment epitomised by the Reconstruction and Development Programme and the reality of a less than optimal institutional environment.

3.5. Communal Property Associations and Land Trusts

Acquisition of land by beneficiaries of the land reform programme is most likely to be done on a communal basis - given the financial limitations associated with such individuals, and the size of the farm units available for sale. Of primary importance to group land ownership arrangements is the setting up of legal entities which can own and manage the land (Joaquim and Sapsford, 1996). Options include Section 21 Companies, Associations of Persons, Companies and Closed Corporations, Trusts and Community Property Associations (CPAs). For rural communities who wish to own land as groups, the choice is essentially between the Trust and CPA options.

The Communal Property Association Act (No 28 of 1996) was established to provide a framework for community land management institutions - in effect to provide an institutional vehicle for rural communities wishing to acquire land. A CPA is a 'juristic person' (i.e. it may sue, and be sued), and may acquire and dispose of immovable property. The Act gives the Minister, at his discretion, the right to waive provisions of the Subdivision of Agricultural Land Act of 1970 in terms of land belonging to a CPA, thus enabling a more flexible approach to the land rights of the members. The requirements for a CPA constitution lay down a complex set of obligations, designed to enforce good management of the affairs of the CPA. Annual independent verification of financial records is required, but it is not clear how the Department of Land Affairs, or any other body, will ensure that these conditions are met, let alone take effective corrective action if the CPA is not meeting its responsibilities in any way. Once established, there is little support available for the CPAs, and little capacity to monitor them.

As there are currently a shortage of facilitators to assist groups, approval and registration of CPAs tends to be a slow process - and loss of momentum and frustration with delays can cause 'meeting fatigue' and group fragmentation. This may have been a factor in KwaZulu-Natal, where most groups have opted for Trust arrangements. Once again the gap between theory and institutional capacity is exposed.

A problem that both Trusts and CPAs share is ensuring that these legal arrangements are effective in the longer term. Longer term sustainability requires investments in facilitation, and institutional linkages - both of which have time and cost implications. In short, land reform policy does not address critical micro-institutional issues because the **focus is on the acquisition of rights rather than on what is needed to sustain them**. It is therefore vital to develop a common purpose between the Department of Land Affairs and the Department of Agriculture so as to maximise the opportunities for synergy. If this does not take place the current situation of 'buck passing' for projects which are not using their agricultural resources sustainably will continue and get worse.

The experience in KwaZulu-Natal shows that community landholding institutions have great difficulty in exercising a management role over land-based resources, although there are notable exceptions such as the CAP Farm Trust (see case study Chapter 2). Cousins (1995) proposes a checklist of factors that should be taken into account in the design of common property regimes in land redistribution programmes:

TABLE 3. Checklist of factors for design of common property regimes in land redistribution programmes

User group issues	(a) Have rules for user group membership (entry and exit) been clearly defined? (b) Is the size of the user group appropriate in relation to the resource base? (c) Do institutional arrangements and/or organisational structures provide a voice for the less powerful within the group? (d) Do institutional arrangements promote the emergence of a 'community identity'?
Resource management rules:	(e) Do rules clearly establish the conditions for collective decision making over resources (eg the right of the group to establish limits on individual use)? (f) Have jurisdicial boundaries been clearly defined? In non-equilibrium ecosystems, have boundary issues been sufficiently clarified? (g) Are operational rules easy to understand, unambiguous, and easily enforceable? (h) Have the number of rules been kept to a minimum? (i) Do rules make provision for monitoring and punishment of infringements? (j) Do rules take into account potential conflicts between different users of resources, and between different categories or groups of users? (k) Do rules establish the organisational form for decision making (eg elected committees)? (l) Does the user group have the right to modify and adapt the operational rules?
Authority and enforcement:	(m) Has authority been allocated at the appropriate level(s)? (n) Have relationships between user group and government agencies, legal and customary authorities been clearly defined? (o) Do institutional requirements have a recognised legal identity? (p) Have mechanisms been designed for negotiation, mediation and conflict resolution, within and between user groups?
Resources:	(q) Do partitioning rules take adequate account of ecological and technical realities (eg key resources; the feasibility of fencing)? (r) Is there sufficient flexibility over boundaries in non-equilibrial systems? (s) Do rules take into account the spatial and temporal variability of resources?

A number of these factors receive scant attention in the current land reform programme. In particular:

- Entry is not always regulated, in that relatives and tenants are able to utilise the resource beyond the levels agreed upon for the member household.
- Size of the user group is often determined by the price/size of the desired land/farming unit,

and the number of R15,000 grants needed to purchase it. This is made worse by current restrictions on land sub-division, and results in unworkably large groups pooling their resources/household grants to purchase collectively.

- Rules do not establish clearly enough the conditions for collective decision making. As a result individuals are able to exploit situations for individual benefit.
- The authority of the structures is at best tenuous, and poorly supported. This makes it well nigh impossible for them to enforce the rules or rectify inadequate rules.
- Rules are often ambiguous and unenforceable under the given circumstances.
- The relationships between the user group and government agencies, legal and customary authorities have generally not been clearly defined.
- Mechanisms for negotiation, mediation and conflict resolution are weak or non-functional.

Maximising the sense of 'ownership of the natural resource' by both individuals and the group within a land reform project is likely to encourage more careful use of the resource. There are arguments for insisting that households, in addition to using the R15,000 state grant, make a contribution from their own resources towards the purchase of the land. This is being practised in parts of Kwa-zulu Natal, where resource poor households can make their contribution in labour (R. Alcock 1997 - *pers comm.*).

3.6. Institutional Linkages

Reference has been made to poor, yet crucial, linkages between local institutions such as farmer associations and external institutions, including service providers, yet few guidelines exist to strengthen these linkages. For example, the 1997 White Paper on South African Land Reform (Department of Land Affairs,1997) specifies that local rules for the regulation of communal resources need to be constructed, but it is not clear how this should, or will happen, and as Heinsohn, Moor, Niewoudt, Reynolds, Rutch & Vaughan (1997) note, *'the micro institutions which are created as land reform projects come on stream are totally isolated entities in that they do not relate to existing institutional and policy frameworks'.*

The starting points of any attempt to rectify this situation could be seen as :

(i) interventions based on participatory dialogue between the key stakeholders including service providers, potential beneficiary groups and intermediary institutional actors (NGOs; Community Based Organisations).

(ii) A collaborative effort of commitments, responsibilities and actions between stakeholders who bring different but complementary competencies to the programme.

(iii) A resultant consortium of stakeholders operating within a clearly defined operational plan with agreed targets and quality control checks and balances.

Case Study - Sustainable Land Use Consortium

In 1996 a number of organisations, at the invitation of the Centre for Sustainable Agriculture (CSA)(see case study, chapter 2) agreed to form a partnership to enhance the agricultural productive capacities of smallholders through the provision of appropriate technical, economic and institutional support services. The manner in which the partnership was managed and implemented provided policy insights into the types of institutional partnership arrangements best suited to appropriate, cost efficient, responsive and transparent service delivery.

Invited to the negotiation table by the CSA were a parastatal research organisation (ARC), a farmers' union (AFU), a government service provider (Western Cape Department of Agriculture), an NGO (the Rural Foundation) and a local rural service organisation (the Centre for Rural Research and Development).

The differences in the history, structure and function of each organisation was marked. For example, the Western Cape Department of Agriculture has historically focused on high external input agriculture, which it has supported by highly organised, high-tech, linear transfer of technology methodology with historically disadvantaged groups neglected. Many members of these groups perceive the Department as being unable to address their specific needs.

More than ten full days of discussion over a four month period were required to establish a code of conduct and to constitute a partnership. The aim of the partnership is to promote sustainable, small-scale agricultural land use practices within an integrated, ecologically and cost sensitive developmental approach. A multi-disciplinary team of stakeholders in a formal, institutional partnership is responsible for the initiative, the stakeholder groups represented in the formal partnership are illustrated in the matrix below:

The Minister of Land Affairs has displayed a keen interest in the institutional and agricultural dimensions of this initiative, and has viewed it as a pilot project which could provide policy guidelines of a practical kind on how institutional partnerships could be structured between public sector role players, NGOs and Community Based Organisations (CBOs). It could thus provide practical ways of demonstrating how the design, field testing and dissemination of appropriate, sustainable agricultural technologies and systems could be institutionally managed within a people-centred developmental approach.

TABLE 3. Institutions, competencies and activities within the consortium

Institution	Nature of Institution	Core Competency	Core Activity
1.African Farmers Union	Apex, Community based institution representing local Farmers Associations	Represent, articulate demand side needs, experiences	Establish local institutional capacitates and align service provider inputs to grass-roots needs and experiences
2.Centre for Rural Research and Development	Community - based, rural service organisation	Provide support services to rural households and community groups	Provide professional training in financial management and administration and establish appropriate financial systems and controls.
3.Centre for Sustainable Agriculture	Non-governmental technical, development organisation	Design appropriate agricultural technologies	Research and development of innovative agricultural technologies.
4.Agricultural Research Council	Public Sector - National	Agricultural research	Discuss, validate and document CSA technologies
5.Department of Agriculture - W. Cape	Public Sector - provincial	Manage Agricultural Strategy and implementation activities	Expedite dissemination of technologies to target groups. Provide appropriate support and extension services to target group.
6.The Rural Foundation	Non-government organisation	Provide support services to impoverished rural households, and communities	Design, implement capacity building and strategic planning skills training programmes for target groups

The sustainability of this model for institutional partnership has yet to be demonstrated, and the following aspects may limit the ability of the partnership to contribute to sustainable agriculture in the region:

i) the development of the partnership was built upon previous relationships, not all of which were positive, trusting and/or supportive. Relatively minor negative experiences could introduce serious mistrust.

ii) The likelihood of donor funding precipitated development of the partnership, introducing a motive for both participation and competition. In the event, the withdrawal of that support might prove a major impediment to the development of the initiative. The world views of the partners are divergent, and could lead to conflict over the appropriate use of resources, and methodologies to be adopted.

iii) Participating government organisations have yet to show that they have institutionalised the approaches developed by the consortium. In this light, the commitment to common goals by the negotiating representatives of government institutions is vulnerable, and could prove insufficient in the case of their replacement.

iv) The inflexibility of government institutions seriously inhibits their ability to enter into dynamic and responsive partnerships with NGOs and CBOs.

v) Technologies developed by the CSA are intended to be adopted by smallholder farmers, and the institutional linkages to this constituency via AFU are seen to be critical. However, the AFU is hampered by a serious lack of capacity.

vi) The NGO partners in the consortium are vulnerable to the limitations of donor funding (short time horizons, insecurity, and donor agendas).

3.7. Conclusions

Government institutional links to the farmer are fragmented between the different tiers of Government, with their different competencies. The third tier, local Government, should be the most relevant and accessible to smallholders, however in many areas it is under-resourced, particularly in appropriately skilled and visionary people. Recent reorganisation of government at all levels, including the processes of bringing together formerly separate white and homeland departments, adds to the current difficulties. The future role of tribal authorities remains unclear. In some areas Government authority is fairly limited with de facto power held by individuals or institutions, sometimes of a criminal nature.

Few local smallholder farmers possess the information, linkages or capacities to lobby the array of departments involved in accessing land, nor can they easily access Government support for programmes such as land reform without organisational assistance. The formation of local farmers'associations, sometimes strategically supported by an NGO, is seen by some farmers as a way of trying to ensure their needs are met. Capacity building for farmers' associations is considered a priority, NGOs are well placed to do this but are constrained by shortage of funds, and in some cases loss of key personnel.

Both for land reform and the promotion of sustainable agricultural technologies, a partnership model is looked at in which different stakeholders join together to implement a jointly agreed set of activities, and to overcome bureaucratic and political blockages. In particular with land reform, political contacts are helpful in helping specific projects to "fast track" a cumbersome process. This is politically important in getting some projects started, however whether such a process is sustainable is doubtful.

There is currently much emphasis on black smallholders gaining access to land. The organisation needed to use this land sustainably and productively, especially when common property and communal management elements are involved, needs careful attention.

Empowering the various institutions involved with smallholder agriculture is a necessary condition for productive and sustainable agriculture, however in themselves they will not guarantee sustainability; of crucial importance is the creation of an appropriate enabling environment which both enables smallholder farming to develop, and provides incentives in favour of longer term sustainability.

4. TOWARDS AN ENABLING ENVIRONMENT FOR SUSTAINABLE AGRICULTURAL DEVELOPMENT

4.1. Introduction

This section explores the services and policies that impact on smallholder farming and its sustainability. The current policy in the agricultural, land and economic arenas are examined, along with the capacities to implement policies within and between government agencies. It must be noted that not only those policies and capacities usually associated with agriculture are of significance here. Lack of social stability in rural South Africa, with high levels of violence for example, has serious implications for sustainable agricultural development in both the large scale and smallholder farming sectors.

4.2. Overview of the Policy Environment

4.2.1 Agricultural Policy

The agricultural policy environment is fraught with contradiction, as is to be expected in a phase of radical political transformation. The situation is further complicated by the increasing pace of globalization where South Africa's former political and economic isolation has been replaced by open borders with greater opportunities for exports, but also increasing competition from countries with relatively high levels of subsidies.

As the overall pace of development increases, and historically disadvantaged communities gain access to improved water supplies and to land for settlement, the distribution of the resource base available for agricultural production will change. Clearly, if agricultural services are to contribute to sustainable agricultural production, a number of adjustments will be necessary not only in the policy environment, but also in practice. This is the core focus of this section.

1995 National White Paper on Agriculture

The 1995 White Paper on Agriculture was the outcome of a consultative process undertaken during the National Party's participation in the GNU, when it held the national Agriculture portfolio. The White Paper is a very broad and sweeping document, a statement of general principal, lacking much detail. The vision which the White Paper intended to achieve was one of *'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). One of the 'crucial policy goals' was that *'agricultural production should be based on the sustainable use of natural agricultural and water resources'* (ibid).

The White Paper defined the client base of agricultural services in such a way as to include most rural users of natural resources[2], and supported initiatives for the development of small-scale farmers. It argued that agriculture should contribute to the enhancement of the quality of life of rural people via increased employment, income and food security. Value was placed on the co-ordination of the activities of Government Departments, NGOs and private enterprise to maximise the potential role of agriculture in rural economic growth. State intervention in the agricultural market was to be limited to the correction of market imperfections and socially unacceptable effects. It also noted that responsibilities of landowners include the rehabilitation of mismanaged natural agricultural resources. Access to finance was to be improved by broadening access to agricultural credit, and access by formerly disadvantaged farmers to services provided by farming co-operatives was to be broadened. Research and extension services were to become more interactive and provide greater support to formerly disadvantaged farmers, particularly those in resource-poor areas.

The lack of detail and clear direction of the White Paper have contributed to little progress being made in pursuit of its lofty aims. To name but two cases in point, the institutional divide created between research and extension by the establishment of the ARC has not been overcome, and the access of small scale farmers to co-operatives has improved little (highly capitalised co-operatives such as the KWV are attempting to prevent wider access to their resources by privatisation). Conscious of the need for a more focused and directed national agricultural policy, the new National Minister of Agriculture initiated a process of policy development early in 1997, including a review of the 1995 White Paper. This process is currently underway.

Provincial White Papers on Agriculture

During the development of the National White Paper on Agriculture, various provincial Departments of Agriculture were establishing their own policy positions. Whereas some have been published and progress has been made towards implementation, in the Northern Province a draft White Paper was produced in 1995, but to date this has never been officially released.

In KwaZulu-Natal a Provincial White Paper on Agriculture was published in 1996 (Kwazulu-Natal Department of Agriculture, 1996), at the time when the National Party held the provincial agriculture portfolio. This White Paper accepts the broad definition of a 'farmer[3]' from the national White Paper, but stresses the importance of the contribution of the agricultural sector to job creation and the economy of the Province. It thus seeks the 'transformation' of small-scale farmers into 'commercial' farmers, through the research and promotion of intensive farming practices, which do not destroy the natural resource base. However, the typologies of 'small scale' and 'commercial' are not clearly spelled out.

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[2] *'A farmer, irrespective of his/her race, gender or scale of production, is a land user who engages productively in agriculture, either on a full-time or on part-time basis and regardless of whether agriculture forms the principle form of income'* (White Paper on Agriculture, 1995).

[3] The policy specifically lists its clients as including household food security farmers, emergent commercial farmers, established commercial farmers, agro-industrial entrepreneurs and organised agriculture.

Broadening Access to Agriculture Thrust (BATAT)
In 1995 the National Department of Agriculture published the 'Preliminary Findings' of an initiative known as Broadening Access to Agriculture Thrust (BATAT). The initiative was intended to kick-start a shift away from white dominance in agriculture, and attempted to assess the needs of black farmers, and identify development priorities and strategies to improve their access to agriculture. BATAT aimed to offer Provincial Departments of Agriculture a range of options from which they could choose the most appropriate. Support systems and infrastructure for 'emergent' and small-scale farmers were to be developed, and the focus of agricultural research and technology support were to be broadened through the adoption of a participatory approach which would give adequate consideration to client needs and indigenous knowledge.

BATAT identified weak farmer institutions as a stumbling block, and advocated the development of farmers' associations. Agricultural extension staff were to be 'reoriented' to better serve their new clients and human resource development programmes were to be promoted, including a farmer support scheme and training programme. Financial assistance to pilot projects for previously disadvantaged farmers was to be established. Natural resources were to be 'restored'.

BATAT was something of a 'wish list' on the part of a National Department, with little line function responsibility for the activities promoted. It was driven by a small minority of black staff within the Departments, and did not have the effect of transforming these Departments, let alone services provided in the Provinces. BATAT served to highlight growing provincial autonomy, a resistance to national control and the depth of resistance to fundamental change within the state sector. It also raised awareness of some of the fundamental issues faced by previously disadvantaged farmers.

4.2.2 Environmental Policy

Environmental policy, by its very nature, is cross-cutting and therefore spread over an array of Government departments at different levels. Policy and legislative jurisdiction over environmental issues are parcelled out into enclaves of activity, often resulting in confusion and conflict. Environmental policy developed in other departments and sectors impact on agriculture and will give rise to demands for new types of technologies.

Policies for environmental concerns are primarily the responsibility of four national departments, Environment Affairs and Tourism, Water Affairs and Forestry, Agriculture and Land Affairs, and Minerals and Energy Affairs. Other government departments such as Trade and Industry and Foreign Affairs fulfil certain environmental policy functions. However, the Department of Environment Affairs and Tourism has the ultimate responsibility for overall environmental management.

Department of Environment Affairs and Tourism
The Department of Environment Affairs and Tourism (DEAT), regarded in the past as somewhat ineffectual, initiated the Consultative National Environmental Policy Process (CONNEPP), which was designed to determine overarching environmental policy to guide all future decision making within and outside of government. This process has resulted in a White

Paper on the Environment (which is destined to become the basis for future legislation). The DEAT is also engaged in approximately 18 other smaller policy processes, the most important being the Integrated Pollution Control process which dovetails with the Department of Water Affairs and Forestry's (DWAF) Water Quality Management policy process, the Biodiversity and Environmental Economics policy processes, and the policy process concerning the Combating of Desertification, which includes the promotion of appropriate technologies for land management. In order to create synergy between these policy processes, the DEAT established a Policy Process Integrated Committee (PPIC). In addition, the DEAT has also established a Committee for Environmental Co-ordination (CEC), an inter-governmental committee aimed at co-ordinating policy efforts and strategies between the different national and provincial governments. Regrettably, neither the PPIC nor the CEC have yet yielded any significant results.

Department of Water Affairs and Forestry

The White Paper on Water Policy (Department of Water Affairs and Forestry, 1997a) prepares the way for a new Water Law, which will enable the Government to pursue equity objectives while ensuring adequate supplies of scarce water resources for economic development. The policy proposes that the status of South Africa's water resources as 'an indivisible national asset' be formalised, thus moving away from the current legal status of private ownership of water resources. Only water required to meet basic human needs and maintain sustainable environmental needs will be regarded as a right. Riparian rights, and rights to ground water will be abolished. To promote efficient water use, charges will be levied for the full financial costs of water provision. Charges for "catchment management" will be levied on all water consumption, and in situations where there are competing uses, a 'resource conservation charge' will also be levied. While this is an admirable step forward for conservation, the practicalities of implementation will be difficult.

The 1996 White Paper on Sustainable Forest Development (Department of Water Affairs and Forestry, 1996) seeks sustainable forest development, and embraces community forest resources, describing them as those 'which are used to meet local social, household and environmental needs and which contribute to local economic development'. As such, the policy addresses natural forests and woodlands, plantations, home gardens and local woodlots. Two key documents which develop the strategy for implementing the White Paper are the National Forestry Action Programme (Department of Water Affairs and Forestry, 1997b), and the Base-line Training Needs Assessment for Community Forestry in South Africa (Department of Water Affairs and Forestry, 1997c). These place strong emphasis on the involvement of local communities and institutions, and strongly promote participatory approaches and methodologies.

An estimated two million rural households benefit from trees and associated resources, primarily in the form of fuelwood. To achieve the policy goal of self-sustaining community forestry, a client-led approach is proposed. A programme that includes enhancing extension skills in natural resource management, generating and disseminating appropriate technologies and assisting with access to, and distribution of, appropriate planting material will be pursued.

Commercial forest plantations, currently yield approximately 17 million cubic metres of timber per year, and are a significant generator of domestic products, employment and foreign exchange. They compete with agriculture and other users for water resources. An improved regulation system for plantations will be introduced, which takes into consideration the water law principles

outlined in the 1997 White Paper on Water Policy. Responsibility for regulation of plantations will be devolved to provincial and local levels.

Departments of Land Affairs and Agriculture
The Department of Land Affairs recently commissioned a study on the integration of environmental concerns into its land reform programme. The National Department of Agriculture, as an integral component of its Agriculture White Paper review process, has established a Sustainable Resource Utilisation Committee to examine the use of agricultural resources and formulate new policy guidelines for the agricultural sector for the long term sustainability of agricultural resources. This is likely to lead to reform of the current Conservation Act, with an emphasis on combining participatory approaches and the regulatory system; it is also an indication that the Department of Agriculture is trying to link in with other policy processes that have an impact on agriculture.

4.2.3 Land Policy

White Paper on South African Land Reform
The White Paper on South African Land Reform (1997) provides a detailed national framework for providing the landless with access to land. The land reform programme has three principal components:

- **Land Restitution**, which involves returning land (or otherwise compensating victims) lost since 19 June 1913 as a result of racially discriminatory laws.
- **Land Redistribution** which makes it possible for poor and disadvantaged people to buy land with the help of a Settlement/ Land Acquisition Grant.
- **Land Tenure Reform** which is the most complex area of land reform. It aims to bring all people occupying land under a unitary, legally validated system of landholding. It will devise secure forms of land tenure, help resolve tenure disputes and provide alternatives for people who are displaced in the process.

(White Paper on South African Land Reform, 1997)

Principles articulated in the 1997 White Paper include social justice and a poverty focus. The programme will be needs based, and the Government will act as a facilitator. Flexibility, participation, accountability, democratic decision making, gender equity, economic viability and environmental sustainability are all stressed (see also section 4.3).

Land reform is being pursued in a tightly constrained constitutional, political and fiscal environment. Whereas the Bill of Rights in the South African Constitution guarantees existing property rights, it also places responsibility on the State to enable citizens to gain equitable access to land, to promote security of tenure and to provide redress to the dispossessed [4].

[4] Restitution is limited to those dispossessed as a result of discriminatory laws or practices after 19 June 1913

Farmer Settlement Policy on State Land of 1993, revised in 1995
Of significance to sustainable agricultural production in the context of land reform is the Farmer Settlement Policy on State Land (1993, revised 1995). Developed by the former governing party, this policy identifies four models for the settlement of farmers on State land (commercial farmer, traditional communal, co-operative and corporate). The policy states that unplanned informal settlement should not be allowed, and that high potential agricultural land must be reserved for agricultural use. Resource utilisation should be strictly managed.

To promote the effective utilisation of the productive land resource base, the policy lists criteria for farmer selection, and argues that a range of agricultural support services should be provided, including financial, training, extension, equipment and management. Private ownership is emphasised. This policy reflects thinking within the NP, and outlines a policy on agriculture that is at odds with national policy on land.

4.2.4 The Economic Framework for Agricultural Development

Growth, Employment and Redistribution (GEAR)
On the broader economic front, the GNU published its strategy on Growth, Employment and Redistribution (GEAR) in 1996 (Government of South Africa, 1996). GEAR is the key economic growth policy of the Government, and seeks to promote a fast growing economy which creates jobs, reduces unemployment, and seeks to establish a more equitable distribution of income. GEAR proposes that Government should be neither the engine nor controller of growth, but instead ensure that there is an enabling environment for growth.

GEAR argues that in order to achieve the national development goals expressed in the RDP, growth must be promoted. The document presents a growth scenario with the following key elements :

- export oriented production;
- a flexible labour market;
- reduced government deficits;
- relaxed exchange controls; and
- tax holidays for investors.

In general, these provide incentives for investors and are likely to skew distribution towards investors and away from labour. Within the context of promoting a more equitable distribution of wealth, GEAR is only likely to achieve this through trickle-down effects, if at all. McKinley, Satgar, & Zita (1996) have argued that GEAR is not a framework within which the RDP can be delivered, as the underlying rationale is monetarist, intended to induce capital accumulation through the financial markets, and that redistribution appears only as a secondary outcome of growth and employment generation, and no longer as the key element of Government economic policy

Probable Impact of GEAR on Agriculture

GEAR makes some high flying assumptions about the impact of land reform on agricultural productivity : *'The land reform programme, combining asset redistribution with enhancement of tenure has an important role in improving the long term prospects for employment and income generation in the rural economy. Progress has been made in finalising procedures for the rapid release of land and the introduction of a settlement grant. Complementary initiatives include emergent farmer support programmes. As these gain momentum, emphasis will shift to marketing support, appropriate technological interventions and streamlined extension services. Over time, agricultural development associated with land reform will play a key role in improving distribution of income and economic activity*.' (GEAR, 1996)

The projections upon which GEAR is based indicate a 0.4% increase in agricultural employment (17,000 jobs) between 1995 and 2000. In comparison, manufacturing and other services are expected to deliver a 2.9% increase in employment estimated over the five year period to total 227,000 and 120,000 jobs respectively (GEAR, 1996).

Government spending in the agricultural sector is likely to be directed towards growth objectives, as opposed to equity or sustainability objectives. If agricultural production and associated support services are predicated upon rapid growth, this will probably lead towards high external input, export oriented agricultural development. It is arguable whether sustainability will be a core component of such systems - especially given the importance of competitiveness in global markets and the need to increase outputs and reduce expenditure.

Simple market orientation is likely to contribute much to environmental or equity needs. In KwaZulu-Natal over the period from 1980 to 1991 the labour intensity of agriculture was halved, from 115 to 56 employees per R1 million of income in the sector (Meintjes et al, 1995). This reflects an increasing trend towards mechanisation, and enterprise changes toward timber. On the other hand, the contribution of agriculture to livelihoods in rural areas is typically underestimated, particularly where agriculture is understood to mean land use in the broadest sense, as opposed to market-oriented commercial activity.

As far as agricultural production is concerned, the effect of GATT related tariff reductions on input prices are likely to lead to lower pricing on herbicides, pesticides and fertilisers, for example, and will encourage more intensive use of these products. The associated externalities in terms of damaging environmental effects are not considered in the current policy framework.

4.3 LAND

4.3.1Existing Land Access

Historically, Government policy was to limit 87% of the population to 13% of the land area, in the tribal 'homelands'. 7.8% of the land area of South Africa was designated as tribal land in terms of the 1913 Land Act. In response to extreme pressure on the land, subsequent legislation

increased the area available for black settlement so as to 'contain' black rural populations within delimited areas by releasing further land to increase the total available for blacks to 13.7%. Within the homelands the traditional land tenure system was modified by legislation, imposing the State President as the paramount traditional leader with final say in all matters affecting land. Although the traditional authorities effectively continued to allocate land, they were transformed into paid servants of the State, and the traditional tenure system under which every member of the community had access to the land was fatally undermined.

Despite high levels of out migration, the policy concentrated large numbers of people in under-resourced rural areas. For example, the average land holding of black land users in the homelands of South Africa fell from over 4 hectares to one hectare (Van Zyl, Kirsten and Binswanger, 1995). The inadequacy of the land and the productive systems that have evolved to support the populations in the homelands is reflected by the fact that 80% of household incomes in the former homelands is derived from migrant remittances and pensions.

Land tenure in the homelands typically encompasses the right to occupy and use residential and agricultural land. Land access is via membership of a community. Under Proclamation R188 of 1969 'unsurveyed land' and 'permission to occupy' land rights could be held by a male person. Inheritance is by male primogeniture, and women could traditionally only retain use of land upon the death of their husband for their lifetime, or until they remarried.

The 1991 Land Reform Acts[5], and their subsequent amendments sought to liberalise land access in the homelands and to create a land market. However, the central government lacked the means to implement these Acts, and concerns from various quarters that the legislation created the 'opportunity for rural poverty to be exploited by commercial concerns' (Rutch and Jenkin, 1995) resulted in their being superseded under democratic government. Access to agricultural land in the homelands is currently regulated under commonage, quitrent or permission to occupy arrangements. The latter two provide tenure to individuals, and may be seen as providing sufficient security of tenure to encourage some investment in the land.

Permission to occupy has been the most common form of tenure for individuals, although in most cases it has not been formalised. Permission to occupy may not be inherited (although under certain circumstances a widow may continue to utilise land granted to her former husband) and on the death of a user the land reverts to the commonage.

Murray (1989), quoted in Van Zyl, Kirsten and Binswanger (1995) states that 'approximately 15% of the land in the homelands is held on freehold or conditional (quitrent) title'. Such freehold land was typically purchased by syndicates or extended families, and is currently heavily populated by decedents of the purchasers. Conditions are thus not supportive of individual investment in agricultural development, and communal resource management systems are generally in a state of dysfunction.

[5] Involving, the Abolition of Racially Based Land Measures Act, 1991, and the Upgrading of Land Tenure Rights Act, 1991

4.3.2 Land Reform

The White Paper on South African Land Reform (Department of Land Affairs, 1997) sets the framework for demand driven and participatory land settlement programmes directed to alleviating poverty and redressing past injustices.

A number of economic arguments for rural land reform are advanced in the White Paper:

- More households will have access to sufficient food on a consistent basis.
- Opportunities for small scale production: on the basis of international research it is argued that smaller agricultural units are often farmed more intensively, and are more labour absorbing.
- Land reform can make a major contribution towards addressing unemployment.
- Land reform will support business and entrepreneurial culture: property rights provide access to capital for investment in entrepreneurial activity.
- Land reform can have favourable environmental impacts: secure tenure is seen as a precondition for people to invest in land improvement and encourages environmentally sustainable land use practices.

The White Paper argues that landlessness and overcrowding in the former homelands, and inappropriate farming methods on large scale farms, have given rise to severe land degradation and soil erosion. Unless preventative and improved resource management measures accompany the land reform programme there is a severe risk of further environmental degradation. It is noted that the Physical Planning Act, the Environmental Conservation Act and the Conservation of Agricultural Resources Act all assume integration of environmental management in land use planning. However, at the administrative level, environmental practices remain sectoral and fragmented.

The land reform policy follows the principle of 'willing-seller, willing-buyer', and seeks to provide grants and services to enable the needy to purchase land. In response to limited financial resources for the land reform programme, and increasing competition between different budgetary priorities, Government grants must be 'affordable in macro terms' (White Paper on South African Land Reform, 1997). This currently translates as a grant up to a maximum of R15,000 per qualifying person. The purpose of land redistribution is described as being 'to provide the poor with land for residential and productive purposes in order to improve their livelihoods'. The programme is intended to assist the urban and rural poor, farm workers, labour tenants and emergent farmers. Viability and sustainability of projects must be demonstrated before funding is approved.

The White Paper notes that options for providing secure tenure to participants in the Land Reform Programme are constrained by existing legislative frameworks. Individual tenure has an extremely limited application, given the limited financial resources available, the high costs of surveying land and the restrictions imposed by the Subdivision of Agricultural Land Act (Act 70 of 1970). The Subdivision of Agricultural Land Act was designed to prevent the subdivision of farms into uneconomic units, and has been one of the stumbling blocks in the way of more equitable and rational land use, and has contributed to the development of the current approach of land reform via communal land ownership.

The White Paper notes that policies restricting farm sizes create rigidities that increase the cost of adapting to changing market conditions. Furthermore, the notion of setting farm sizes to achieve minimum and maximum returns makes assumptions about fixed price ratios, constant technology, and on- and off-farm income generation which are not valid. Under-used land suitable for redistribution is spread over many large-scale farms. Many farms have a core area of land as well as other land which is less intensively used. Acquiring and redistributing the under-used pieces would have a positive impact on aggregate production and provide opportunities for resettlement and a mix of farm sizes. For the land market to work more effectively, owners must have greater flexibility to dispose of less intensively used portions of farms. Laws prohibiting subdivision prevent the price of under-used land from falling towards its low-use value, and prevent its redistribution through the land market.

The limitation of the current household settlement grant to R15,000 per household, and the poverty criteria that apply to those receiving it, mean that in practice beneficiaries may gain access to a land resource that cannot provide an agricultural livelihood sufficient for the entire household. This raises two concerns: the perpetuation of poverty with all its social implications and the likelihood of that the natural resource base will be over-exploited if households lack the means for adequate sustainable agriculture based livelihoods on their new land.

In rural KwaZulu-Natal the entire grant would be sufficient to purchase approximately 45 ha of unimproved, marginal grazing land, which would be enough to graze approximately 6 LSUs (which is inadequate for the sustenance of a household), and no suitable land for arable use. Bembridge (1984) calculated 8 LSUs and 4 hectares of medium to high potential arable soil as the minimum for subsistence for rural households in the Transkei.

There is widespread concern that allocating households insufficient land will mean overuse and insufficient surplus generated for investment in conservation. It is argued by some, that sufficient land with appropriate resources must be allocated for the establishment of 'economic units' in order to achieve sustainability.

The notion of an "economic unit" is an entirely normative one. The vast majority of rural South Africans have evolved multiple livelihood survival strategies, and beneficiaries of land reform programmes often have sources of income other than agriculture (remittances, transfer payments such as pensions, etc.). In the emerging experience of the land reform programme in KwaZulu-Natal, beneficiaries have retained other sources of income, and are not entirely dependent on the land for their livelihoods. **Decisions at a household level about resource use or investment in conservation appear to have far more to do with other factors than relative dependence on an adequate income from agriculture.**

Case Study: Resource Access and Management in Three Land Reform Communities

This case study reflects on aspects of access to grazing and arable land of the KwaZulu-Natal

communities of Cornfields, Thembalihle and Gannahoek, and aspects of their management of these resources.

The Cornfields and Thembalihle communities in the Estcourt District received land with Government assistance in 1994. Most beneficiaries were previously tenants, and a small minority landowners. Each of the beneficiary households (442 households at Cornfields, 267 at Thembalihle) has equal access to communal grazing. The average carrying capacity was calculated at 4 hectares per LSU, providing a sustainable grazing resource for approximately 2.5 LSU per household for Cornfields and 3 LSU per household for Thembalihle. Availability of arable land of medium to high potential is very limited (approximately 0.1 ha/household in Cornfields, and 0.04 in Thembalihle), but opportunities exist for irrigation of this land.

Three years after taking possession of the land, the residents of Cornfields and Thembalihle have utilised the grazing resources for cattle and goats, but have not invested significantly in agricultural infrastructure or in cropping, and most arable land has remained fallow. Off-farm employment has been retained and developed wherever possible. Despite the support of an agricultural NGO (the Farmer Support Group) and the Department of Agriculture, agreements to limit livestock numbers have proved difficult to negotiate, and impossible for the respective Land Trusts to implement. In the absence of effective governance wealthier members of the community have tended to increase their herd sizes in order to maximise their short term benefit. Stocking in May 1996 was at an equivalent of 1,610 LSUs, or 2.7 hectares per LSU, considerably more than the recommended 4 hectare per LSU. The LSU calculations have severe limitations for opportunistic grazing under smallholder conditions and tend to be conservative, aimed at maximising productive off-take under large scale conditions. However, even with differing production goals and a more robust approach to grazing utilisation, the stocking rate gives cause for concern.

The 18 households beneficiary households of the Gannahoek Trust (a former labour tenant community in the Colenso District) have access to a larger area of veld per household with a lower carrying capacity (6.5 hectares per LSU), on which basis each household has grazing for >5 LSU. Opportunities for agricultural intensification are severely limited by a lack of water for irrigation. Members have collectively invested both capital and labour in conserving and improving the productive potential of the land (fencing, vegetable production, bush clearing). Although here, too, the wealthier members of the community have exploited the resource base to a far greater extent than the poor, all members of the Gannahoek community have agreed to a limit on livestock numbers.

In the case of each community authority has been vested in a Trust, and no external agency has been in a position to impose regulations or limitations on resource utilisation. Similar support services have been available to this community, albeit for a shorter period. Institutional development has been facilitated in similar ways, by the same agencies. The most significant differences appear to be the relative sizes of the communities and the fact that only Gannahoek has been relatively stable for a long period of time.

Lessons learnt:

- poor regulation of livestock numbers and the absence of user charges for resource use have

resulted in a situation where the wealthier members of the community have been able to exploit the resource base to a far greater extent than the poor.
- Smaller communities, those with a high degree of community stability and those with effective authority structures are more likely to adopt sustainable management practices.
- More emphasis needs to be placed on the longer term sustainable use of the land resource, not just on its acquisition.

Experience in the Land Reform Programme indicates that not only is it vital to ensure a match between community aspirations and selection of land, but also that access to additional capital and appropriate support services (including extension, technical services, infrastructure development and marketing support) are needed to ensure that the beneficiary community is able to maximise its opportunities for agricultural livelihoods in the long run. Appropriate incentives, such as subsidies for appropriate small-scale conservation works (such as swales or contour lines of vetiver grass) may be of value here, and are not catered for in the current policy environment at either national or provincial level.

As those households gaining land were previously largely dependent on non-farm income, farming is likely to make up only part of household livelihoods. The critical question is whether the technical, economic and social conditions are favourable to sustainable and profitable farming on any scale, whether as a part time or full time enterprise for one or more members of the household. If conditions are favourable (and secure tenure is vital here) off-farm incomes are likely to be used to invest in the family farm. The experience in Machakos, Kenya is that the intensification of land use and increases in production associated with improved conservation have occurred in a situation where off-farm employment is not only common, but is associated with successful producers (Tiffen, Mortimore and Gichuki 1994). In Machakos, investment of off-farm income in improving the productive capacity of the land by soil and water conservation techniques, improving soil fertility and investment in trees appears to have been a highly significant factor in increasing agricultural incomes, while also promoting sustainable land use.

Officials of the Department of Land Affairs recognise that the statements of intent to use the land productively and sustainably are no guarantee against over-exploitation and degradation. However, once the land acquisition and planning processes are completed and a legally constituted community management structure is in place, the Department's responsibility is effectively at an end. The DLA does not have the capacity to provide after-care to the land-gaining communities.

Officials of the KwaZulu-Natal Department of Agriculture are also aware that there is no framework within which sound land management or good governance can be ensured. The Department accepts a limited technical role in the planning process, but lacks the skills to translate this into a participatory process, which includes the complexities of need likely to be expressed by such large groups. It sees its role in after-care as being very limited, as it claims that it does not have the resources to provide a committed extension service to land reform communities.

It must be noted that the withdrawal of an under-resourced Department of Land Affairs following the land acquisition and planning process, and the lack of capacity (in terms of

personnel and appropriate skills) and will of the Department of Agriculture are potentially disastrous, unless effective community based management systems are in place. These systems will however need longer term support than there is currently capacity to provide.

Case Study : Pakkies Land Reform

This case study highlights different priorities amongst members of the same community in selecting land for settlement under the Land Reform Programme.

The Pakkies community lives on two adjoining black owned farms[6] in the Kokstad district of KwaZulu-Natal. The farms are historical relics, most black owners having lost their land to while large scale farmers over the decades, they are owned by the descendants of the original owners. Many of the residents are tenants of the owners and are farm workers displaced from white owned farms in the district. The land is used for maize, and extensively to graze cattle and goats. The land owners have depended more upon the rentals paid by tenants for their income than on agricultural production. Livestock owned by tenants has increased pressure on the grazing resource, leading to its deterioration. The Pakkies community has received no services from the Department of Agriculture in recent years, and no controls under the Soil Conservation Act have been applied.

In the period leading up to the 1994 elections a rent boycott on the part of tenants led to severe friction with the landowners, who brought an eviction order on them from the land. In 1996 the Department of Land Affairs was requested to make land available to the landless, utilising the R15,000 household grant. A delegation from Pakkies visited a number of farms in the area, to assess which might be suitable for purchase.

In March 1997 a participatory workshop was held by the Department of Land Affairs to assist the community to make an informed decision about the land to be purchased, and how it would be used (Cousins, T, Joaquim, E and Oettle, N. 1997). The Department was concerned that land which had been bought elsewhere with the R15,000 grant was not providing the basic necessities for sustainable livelihoods, and that this was resulting in degradation of the resource base (Mdu Shabane *pers comm*)[7]. However, it was felt that if the potential beneficiaries could be assisted to think through the options available, and how the project would contribute to improvement in the quality of their lives, the chances of establishing sustainable livelihoods would be increased.

By the end of the workshop it was clear that there was a strong group (approximately 90 households) that preferred acquiring land adjoining the existing settlement. They would be able to stay in the neighbourhood, and use the schooling facilities available without hindrance. Many of this group are employed in the area, or in nearby Kokstad, and their primary objective appears

[6] Waterval No. 294 and the Remainder of Melkspruit No. 293, both registered in the name of Marthinus Pakkies in 1879.

[7] Mdu Shabane, Deputy Director, Department of Land Affairs KwaZulu-Natal

to be a secure and familiar place to live, with access to services. The farm Abergeldie, adjoining the Pakkies land, would offer 0.2 hectares irrigated land per household, a further 0.2 hectares of arable land, and 7.3 hectares grazing land per household (sufficient for 3.3 LSUs). Limited opportunities for agricultural intensification did not seem a disincentive to this group, which appears to be more set on acquiring secure tenure than maximising agricultural income.

Another well motivated group of approximately 120 households wanted to purchase a farm which would offer real opportunities for agricultural livelihoods, and identified the farm Aloekop as their priority. The farm is well developed, and the grazing land is well camped and conserved, and highly productive. The group is convinced that the farm offers them good potential for agricultural livelihoods, including potential for irrigated high value crops such as vegetables. An initial survey shows that the Aloekop farm would provide 120 households with .55 hectares of irrigated land, a total of 1.77 hectares of arable land and grazing for approximately 4 LSU per household (on the basis of 8.36 hectares of grazing land per household, and a carrying capacity of 2.2 ha per LSU). As all of the arable land is potentially irrigable from water sources on the property, the potential for intensification under irrigation is excellent, given relative ease of access to markets for vegetables and fruit.

Additional capital and appropriate support services will have to be available to ensure that the beneficiary community is able to maximise its opportunities for agricultural livelihoods in the long run. Furthermore, given the relatively large size of the beneficiary group (not all of whom know each other), and the fact that most will be moving into a new environment, sound institutional arrangements will be critical. Devolution of responsibility for resource management and conservation to smaller user groups (for example groups of graziers allocated to specific areas of the range land) can address the problem of community size.

These two groups have a common desire to gain secure tenure, but the latter prioritises land-based livelihoods, while the former see land based livelihoods as important supplementary sources of income, but second best to off-farm employment opportunities.

Lessons learnt:

- Different potential land recipients have different needs and aspirations. Therefore bottom-up planning is needed from the start to enable appropriate land selection.
- Even within a limited geographical area and with the limited budgets available there is scope for strategic choices to be made about which resources to buy and how they should be managed.
- Shortage of community organisation skills rather than technical farming skills is likely to be the key limiting factor both among the smallholder farmers and those available to provide support (e.g., within the DoA). Initial project design, with subdivision of key resources into smaller units, managed by smaller, more cohesive groups of households may be crucial factors in determining sustainability.
- Experienced community facilitation and participatory planning skills are needed; these may be best provided by a specialist NGO.

Some observers fear that land reform polices in their present form could well exacerbate an entrenchment of the dualism which characterises the rural economy. Settling poor landless

people in areas of poor agricultural potential, using very small state grants, will mean dense settlement of the land acquired. Beneficiaries are almost entirely dependent on the grants because they have no resources of any significance and are unable to borrow from financial markets. Some fear this type of land reform will lead to the 'homeland or Bantustan resolution' of the land question (Heinsohn *et al*, 1997).

In contrast to the land reform approach, the Department of Agriculture's Farmer Settlement Programme aims to establish small farming enterprises on 'economic units'. This policy was apparently intended to enable the creation of a class of black small-scale capitalist agricultural entrepreneurs. On the basis of physical potential and economic models, policy makers and implementers will decide on the scale and type of farming enterprise that should, "ideally", be developed by the smallholder farmer. Whether these "economic units" will be sustainable in the longer term remains to be seen, given the diverse livelihood strategies adopted by rural South Africans. The two policies are designed to meet different social and economic objectives, they are however in competition for scarce resources.

Heinsohn *et al* (1997) further argue that there is a critical need for a re-orientation of existing policies, especially if economic opportunities are to be maximised. For the Department of Land Affairs, re-orientation would mean modifying the presumption that land reform can assist the poorest of the poor, and broadening the scope of land reform to target areas where provision of access to land can unlock economic opportunities. For the Department of Agriculture, re-orientation would mean modifying farmer settlement policies in recognition of the fact that many of the beneficiaries will probably not be full-time farmers, and that there is a need to provide a diversity of economic opportunities in agriculture.

Heinsohn *et al* (1997) also point out that most restitution and redistribution cases currently being dealt with by the Department of Land Affairs lie outside the areas targeted for growth and development, and that there is *"no precedent .... for constructing projects and programmes on the basis of objectively identified economic opportunity, rather than on the basis of self-identified need."* They point out that tensions may arise between spatial restructuring initiatives and land reform initiatives, and that in restitution cases, land claims may potentially undermine spatial restructuring priorities. In many ways this reflects tension between a 'bottom-up' farmer demand driven process and a 'top-down' technocratic driven process. Ultimately some aspects of both will be needed to produce effective and sustainable solutions.

The White Paper on Land Reform (Department of Land Affairs, 1997) takes an optimistic view of the likely effects on the environment, premised on the belief that if people have increased opportunities for diversification of income and increased control over their lives and environment, the risk of land degradation will be reduced. The paper recognises that unless projects are properly planned and effective measures are in place to govern the zoning, planning and ultimate use of land and water resources, the programme will result in productive land being used in ways that are not sustainable. **The principle that the new owners of land should be the principals in the planning process, and that planning should not be taken over by outsiders, as they will not live with the consequences of poor planning, is advocated. While this is theoretically correct, the capacity to produce the environment in which this is achieved is limited.**

4.4 Research and Extension

4.4.1. Departments of Agriculture

The National and Provincial Departments of Agriculture are still undergoing transformation from racially fragmented administrations into coherent national and provincial services. The process has been a slow and cumbersome one, fraught with difficulty relating to lack of clarity over division of responsibility between the national and provincial Departments, overstaffing, inefficiency, inappropriate skills, racial prejudice, political inexperience of the post-apartheid government, supply-side cultures of delivery, and resistance to change on the part of staff.

Transforming from an administrative culture of regulation, to one of enabling, has proved a massive task, and in many cases early retirement of recalcitrant individuals has been seen as the only way to bring about the necessary transformation. However, the constitutional provision that ensures civil servants their jobs until 1999 has meant that this policy has had to be pursued on a voluntary basis by offering 'packages' for early retirement. In many cases, the most able and competent have sought employment in the private sector and 'taken the package', whereas the least competent have stayed in their posts.

Staff motivation has proved equally difficult. In the homeland administrations inefficiency was rife, associated with a lack of either accountable government or fundamental belief in the systems of government on the part of the people, and those appointed to serve them. It is common knowledge that, in their official capacity, many extension staff did very little other that attend occasional meetings with their supervisors. Situated within an expert driven, reductionist paradigm of agricultural development, most homeland extension staff lacked practical farming skills, and their expertise was extremely limited, and often quite inappropriate to the needs of their clients. Education levels were low, with most extension staff holding two year Diplomas in Agriculture from one of the Agricultural Colleges. In many cases extension staff had not completed high school before entering the colleges, and possessed inadequate conceptual, mathematical, analytical and writing skills. The extension methodologies taught were based upon invalid models of innovation and learning, and were invariably top-down in their application and administration. Technologies promoted by the homelands departments were focused on modernising traditional production practices, and tended to be based upon high levels of external inputs. When staff of the homelands administrations were incorporated into the new provincial departments, so was a culture and skills base that was not appropriate to demand driven, sustainable agricultural development.

Case Study: Agricultural Service Provision at Tugela Ferry Irrigation Scheme, Msinga District, KwaZulu-Natal

The tribal areas of the Msinga district are characterised by a limited natural resource base, high population densities, widespread resource degradation and endemic factional violence. Rainfall averages 450mm, and is erratic.

The Tugela River is a major resource in this arid area, particularly as the relatively warm climate allows for the production of most vegetable crops year round. An irrigation scheme was installed at Tugela Ferry between 1910 and 1915, and since then, furrows have provided water to plots on both banks of the river. Plots of 1,000m² were originally allocated to households based on the traditional method of land allocation in KwaZulu, through the traditional authorities.

More recently at the Tugela Ferry Irrigation Scheme, committees were instituted to modernise the system and ensure a greater degree of participation by the community. The system of allocation of plots had become highly inefficient, with new entrants into the Scheme being limited to one plot of more marginal land. However, some individuals reportedly "own" up to 13 plots, to which they have gained access by abuse of influence. There are many unused plots at any time, as many "owners" are not utilising their allocated land.

The Scheme is tribally divided amongst the Mabaso, Ngubane (Mabuvini) and Mthembu tribes. Of these, the Mthembu tribe commands most of the land. Its area includes all of the land to the north of the main road to Tugela Ferry, and significantly also includes Tugela Estates, a very extensive, highly capitalised and virtually dysfunctional scheme up-river.

By the early 1990's the Scheme infrastructure was in poor repair, and the KwaZulu Department of Agriculture (KDA) was not maintaining it. There was so much water loss from the furrows that some plots were not being supplied with water. Water Bailiffs employed by KDA were neither effective nor accountable. Conflict between Agricultural Officers and Scheme Committees was endemic, with each side blaming the other for the situation. Of a total area of 665 ha, 300 ha (mostly in the Mabaso and Ngubane areas) was poorly supplied with water. In response to chronic inefficiency and corruption, people started their own initiatives, encouraged by Agricultural Officers. User groups co-ordinated through a local church purchased pumps and provided their parts of the scheme with water directly from the adjoining river, and achieved notable success in producing tomatoes for the local and urban market. An engineering company was contracted to repair the scheme at a cost of R2 million, but were apparently not accountable to the local community in any way, only to KDA. Corruption was apparently rife, and large sums of money were allegedly wasted. Conflict ensued between the community and KDA.

The KwaZulu-Natal Department of Agriculture has incorporated the staff and structures of the former homeland KwaZulu Department of Agriculture (KDA). It has an establishment of 10 Extension Officers in the district. Of these, 5 are based on the irrigation scheme, where their work is supervised by a Deputy Senior Agricultural Officer/ Scheme Co-ordinator. In addition, the District is serviced by 3 Home Economists, 12 Agricultural Assistants, 3 Animal Extension Officers and a number (approximately 25) of Animal Health Assistants who are responsible for providing dipping services and keeping livestock registers. The Department plays no role in regulation of livestock numbers or land allocation.

The Ikhwezi Cooperative is situated at Tugela Ferry, and supplies agricultural inputs. It was established by local people, who contributed the funds for its establishment. It was envisaged that its physical location near the KDA District Offices would be suitable for servicing the irrigation scheme. Technology promoted and adopted on the Scheme is very dependent on artificial fertiliser and other inputs. The Co-op's history has been troubled. While being run by

the elected representatives of the local farmers it got into serious difficulties. It was revived through the efforts of a local church, and the church leaders became administrators. This intervention enabled the co-op to continue its service role, but was not without controversy and conflict. At the same time the Co-operatives Section of the KDA also provided support.

Msinga is a district which has been "serviced" by the State for generations, and currently enjoys considerable resource allocation. However, very little benefit appears to accrue to the people of the District. Irrigation systems are producing far below their capacity. Improvement appears to be a result of initiative on the part of individuals and a church group that chose to place their faith and energies in their own efforts, and not to depend on the ineffective state system and traditional authority.

Lessons learnt:

- Providing resources and services in a 'top down', technocratic manner is ineffective, especially where local institutional development is weak or corrupt.
- Small scale 'bottom up' initiatives involving fewer people, each with a significant stake in the initiative, is more likely to be effective; however such initiatives still often need 'outside' or 'independent' support or facilitation.
- The use of private sector contractors is not necessarily successful, it depends on the context in which the contract is awarded and the skills of the contractor (including community relations skills)
- External inputs can be supplied through a locally organised co-operative, but such organisations are not necessarily straightforward or problem free.
- An 'honest broker' such as the church, or sometimes and NGO, can be important where there is intra-community tension.

In the former white administration, motivation levels were far higher, as were qualifications (typically a university degree) and skills levels. Working closely with a highly productive, skilled and politically influential farming community, competence was necessary. Extension methods tended to be more appropriate, with farmer study groups playing a significant role in technology transfer. However, as in the homeland services, sociological aspects were not considered to be a concern of the Department of Agriculture, which did not regard the farm family as an integral part of the farming system, but rather regarded the farmer (typically male) as the system operator. Participatory methodologies *per se* were not practised.

At a provincial level, integration of the former homeland and national services has been patchy. In some provinces many of the ills of the former administrations are evident, with the added factor of resentment and hostility between staff of the former administrations based upon cultural, historical and racial differences - particularly in the Northern Province and Eastern Cape. In others areas, progress has been better, particularly where the political leadership has been strong and consistent, and the logistical problems of integration have been relatively simple (for example, the Free State). The Western Cape experienced no change in political direction following the 1994 elections - consistent bureaucratic leadership and minimal disruption from the integration of only one, much smaller 'Coloured' administration into the former white service. Land holdings in the Western Cape are virtually exclusively in white hands, with economically strong export oriented agriculture. As a result it has been a case of 'business as usual', associated

with a somewhat complacent attitude as far as serving the majority of rural people in the Province - the landless who are the primary target of land reform initiatives.

In KwaZulu-Natal the bureaucratic leadership of the restructured Department is essentially a combination of the two former administrations, and the approach has been to up-grade the technical skills of the former KwaZulu administration staff, whilst providing a more effective management structure. A Farming Systems Research and Extension unit has been established to enable a better understanding of the constraints faced by smallholder farmers. However, it is small and as yet very inexperienced. In the context of land reform, the KwaZulu-Natal Department of Agriculture has seen its primary role as being to provide agricultural land use planning services.

From the perspective of the Department of Land Affairs, poor service provision by the Department of Agriculture to the Land Reform Programme is a major problem. The White Paper on Land Policy (Department of Land Affairs, 1997) notes that *'the experience of the land reform programme over the past two years has demonstrated the critical importance of establishing a clear understanding between national and provincial governments of their respective roles and responsibilities in regard to land reform. This understanding must be backed up by institutional arrangements that are capable of ensuring that delivery of land related development takes place effectively.'* It further notes the need for *'the structuring of agricultural extension services to meet the needs of the entire spectrum of land reform beneficiaries, including subsistence producers'.*

4.4.2. Institutions for Technology Transfer and Development: Education and Training

South Africa has a wide range of institutions which offer agricultural education and training programmes such as universities, technikons, colleges of agriculture and schools. There are also a number of training organisations which are run by non-governmental or community based organisations. Twelve colleges and six technikons offer courses in agriculture. Half of these colleges are administered by the National Department of Agriculture and were established according to agro-ecological zone. Different specialist courses and curricula, depending on the main farming practises and local agro-ecological and climatic conditions, were designed for each of the colleges. These colleges occupy a niche in the training sector and provide training relevant to local conditions. In the former homelands, colleges were run by homeland governments and the principal aim was to generate extension officers who would work for the government.

There are substantial discrepancies between historically white and black colleges. In 1992 the Association of Principles of Agricultural Colleges was formed to standardise training and education, to promote co-operation, act as a central co-ordinator and ensure that a common accreditation system is adhered to. Some colleges have started bridging courses to improve proficiency in basic science and mathematics amongst black students, especially from the former homelands.

Since the elections in 1994, attempts have been made to rationalise and create a national training framework for agriculture. However, a study undertaken by the LAPC in 1996 found that

colleges had weak links with the Agricultural Research Council and the universities of the former homelands (Gebeda, Nhlapo, van Niekerk, Taylor and Underwood, 1996). This study also noted that colleges are beginning to shift their focus to the needs of smallholders, but that much greater support is needed to achieve this. In particular it noted the need to develop stronger linkages between research, extension and training, so that the training is informed by experience on the ground.

Recently, there have been initiatives such as that taken by the Farmer Training Network in KwaZulu-Natal which is aimed at farmer training. Several colleges are undertaking training for rural communities through farmer workshops and special research programmes. At a national level, the Broadening Access to Agriculture Thrust (BATAT) has developed a strategy to extend training and education to disadvantaged or excluded groups through its Human Resource Development Design Team. This programme appears to have been ineffective.

4.4.3. Research Institutions

Research in South Africa is supported by several institutions including the Science Councils such as the Agricultural Research Council (ARC), Foundation for Research and Development (FRD), and the CSIR; universities; and technical colleges. The most important research organisation serving agriculture is the Agricultural Research Council (ARC), a parastatal which has 16 institutes.

These major role players have committed themselves to newly identified work programmes which place importance on making rural areas sustainable environments from which families can generate a livelihood, through the promotion of agricultural practises that are of economic value and are ecologically sustainable. Given that these programmes are new, it has been difficult to measure their impact on smallholder agriculture. The role of the largest of these, the Agricultural Research Council, is most significant in the debate on sustainable agricultural production, and is explored below.

The Agricultural Research Council

The history of agricultural research in South Africa shows a pronounced bias towards the support of the large scale white dominated farming sector, and was largely focused on improving farm productivity on large scale farms, against a backdrop of government policies of food self sufficiency, subsidised capital and the acquisition of large machinery and labour saving technology.

The research needs of this sector were, until 1992, provided by the Department of Agriculture. In 1992 most of the national agricultural research functions of the Department were incorporated into the ARC, a statutory body formed in that year. However not all research personnel and research facilities were transferred to the ARC, some went to provincial departments of agriculture and consequently, all provinces have at least some research capacity. This point has relevance for sustainable agriculture, as one of the negative consequences of this

split and the subsequent provincialisation of South Africa was that it created an "us and them" situation, where the ARC was suddenly an external player in the provinces and sometimes viewed as a threat by the remaining researchers, who saw it as trying to dictate provincial research functions. Of even greater significance was that the split further isolated ARC research capacity from extension services, which are a provincial responsibility, although research-extension linkages were never particularly strong even before the split - in the case of the homelands they were non existent.

The net outcome has been a definite process failure in the communication and understanding of (especially black) farmer needs. Suitable research, technology development and application have subsequently all been retarded.

Nevertheless, the ARC is considered to be technically the foremost agricultural research institution on the continent employing about 4,000 staff. It receives Government grants according to the Framework Autonomy which must be approved by Parliament every year. In 1994 the LAPC conducted a review study of the ARC and made major recommendations in regard to its restructuring. At the time, a gap was identified between farmers on the one hand and research and extension on the other. It was found that the ARC generally produced research mainly for academic purposes but which had little practical application for farmers (LAPC, 1994).

Another Report (van den Ploeg, van den Hoogen, & Moors-Dekker, 1994) found that within the ARC and universities, a strong belief existed that the existing stock of knowledge could easily be transferred to smallholder farmers to spur-on rural development. What was not clearly recognised was that social, economic and environmental conditions faced by smallholders needed to become the point of reference. The biggest hurdle to effective technology transfer by institutions was seen as the identification of effective ways of communication that would promote meaningful dialogue between farmers and researchers.

Presently, there are attempts being made within the ARC to enable it to be more responsive to smallholder farmer demands (ARC, 1995) and a Farming Systems Research and Development Programme has been initiated (ARC, 1994). However, the current commodity focus prevalent within the ARC will retard these efforts and management systems to ensure participative and multi-disciplinary approaches to systems identification, analysis and development, are required.

4.4.4 Commercial Research and Extension

It was noted in Chapter 2 that commercial research and information provision to farmers tends to be biased in favour of:

- increased expenditure on inputs
- larger farmers and their co-operatives, where transaction costs on both the supply of inputs and information transfer are lower.

There are however examples where the large scale sector has linked closely through a specific outgrower scheme. The sugar industry case study below provides an example of partnership between commercial and smallholder interests, and government.

Case Study: Extension Partnerships in the Sugar Cane Industry

The South African sugar industry depends on the production of cane by 35,000 small scale growers (20% of tonnage) and 2,000 large scale farmers (80% of tonnage) to supply its sixteen sugar mills. Since the 1970's the smallholder cane sector has expanded considerably, largely because the white dominated industry provided small scale producers the opportunity to enter production in a sector which would not involve them in complicated input supply and marketing arrangements. The Small Grower Financial Aid Fund (FAF) was established in the 1970s, and underwritten by the South African Sugar Association (SASA), a grower and miller partnership. FAF enables smallholders to access loan funds for inputs without any security. Repayment is easily administered because it takes place by cession on cane delivered. With no alternative markets for cane, the FAF has enjoyed excellent repayment rates.

The sugar industry has its own research station at Mount Edgecombe, and has also historically funded its own extension and training activities via levy (sixty percent was contributed by growers and forty percent by millers). Sixteen extension officers were employed, of whom one was devoted to smallholder Indian farmers, and one to smallholder black farmers. In 1990 the Small Grower Development Trust (SGDT) was initiated by SASA in recognition of the fact that small growers were not sufficiently involved. Effective representative structures were seen as necessary. As a result of this intervention, all growers are represented on the basis of 50/50 large scale/small scale farmers all the way up to the Council of the Sugar Association.

As the increasingly empowered smallholders agitated for increased productivity, industry had either to fund further extension or find an alternative. A review was undertaken, and a new strategy developed in 1994. The Provincial Departments of Agriculture in KwaZulu-Natal and Mphumalanga were approached and a partnership arrangement was brokered under which a joint programme is undertaken to service smallholder cane growers. In KwaZulu-Natal, two extension officers are seconded by SASA, and a further two are funded on a 50/50 basis. The four extension officers supervise the activities of forty technicians from the Department of Agriculture. In Mphumalanga the DoA has funded one Extension Officer and a number of technicians.

Extension to large scale producers operates on a user pay basis, and groups of large scale farmers requiring the service pay a R1.60 per ton sucrose contribution. This has proved adequate to fund the service.

Three year joint project agreements are the basis for the programme, and joint management teams of Government and sugar industry personnel manage it in each Province. One aspect of the programme that is somewhat imperfect is that the technicians are still answerable to the DoAs, and accountability is poor. Secondment of all staff to one joint management structure would certainly be more effective.

Lessons learnt:

- In the right circumstances partnership arrangements between commercial processors and smallholders can be mutually beneficial and sustainable.

- Specific initiatives are often needed, however, to 'redress the power imbalance' and ensure empowerment of smallholders.

- Appropriate management structures, perhaps involving secondment to a joint structure, are needed to ensure adequate accountability of staff.

4.5 Agricultural Inputs

Access by smallholders to agricultural inputs in South Africa is generally poor. In stark contrast, the white commercial sector is well served by the cooperative sector and by a range of commercial enterprises which provide on-farm advisory services, frequently backed up by the capacity to deliver inputs on farm.

The South African co-operative movement emerged as a social, economic, institution building and developmental instrument in response to mass white impoverishment of the period 1900 - 1935. The Agricultural Development Act of 1904 in Natal is widely recognized as the country's first item of legislation specifically designed to provide financial assistance to agricultural co-operatives. The Co-operative Societies Act of August 1922 provided an enabling legislative framework for the economic and quantitative growth of the movement. The number of registered co-operatives grew from 81 in 1922 to 405 in 1929, with a corresponding dramatic increase in membership from 14,000 to 46,000 . The first wave of co-operatives were primarily agricultural co-operatives which enjoyed legislative, financial, educational and business support from Government departments.

South African agricultural co-operatives are by and large the business wing of the South African Agricultural Union which was established in 1904. The mandate of the SAAU is captured in one of their objectives:

> *'To organise the white agricultural population of the Republic of South Africa and South West Africa together with all agricultural co-operatives in a united agricultural front which makes it possible to co-ordinate all viewpoints, so that the agricultural population can speak with one voice on matters of general as well as of particular interest'* (Van Niekerk, 1988, pg.83)

From the start, co-operatives had a distinct racial bias. A range of statutory and non-statutory measures were employed to ensure that under the apartheid regime the large co-operatives had exclusive white membership. In stark contrast, homeland cooperatives were poorly capitalised, technically supported and administered. In many cases they were virtually run by the staff of the homeland Departments of Agriculture, who generally lacked business management skills. Extremely high rates of failure were inevitable.

There are presently about 270 co-operatives in the country, with an annual turnover of about R23 bn. They account for more than 80% of the total marketing and handling of agricultural products in the country. These co-operatives are important agricultural business institutions responsible for supplying about 80% of all intermediary goods and 50% of all capital goods used

in agriculture.

The recent trend to privatize co-operatives could maintain their racially exclusive membership base. In the past decade membership fees have been steadily increased. In the past, while white cooperatives enjoyed protection and generous subsidies from the State, their policies were intended to enable new members to participate. Only a small percentage of the membership fee was required to obtain benefits. Currently, the aspirant member must pay a far higher entry fee, which is generally prohibitive for smallholders. As such the interests of the entrenched members are guarded, and broadening of the membership base of co-operatives is taking place only on a very limited scale.

Currently partnership arrangements between large scale co-operatives and small emerging co-operatives are being explored in some sectors.

Increased co-operative and private sector involvement in input supply and marketing processes to smallholders would allow government services to focus on areas of market failure. However in the interim, the absence of economic infrastructure and business institutions which cater for the input supply and marketing needs of smallholder farmers will continue to hinder the economic viability of the latter.

Input supply to smallholders by the private sector has occurred on a limited scale, primarily in the rural commercial centers catering for white farmers. Packaging and promotion of products has been directed at the two extremes of the large scale producer and the home 'hobby' gardener, and in the latter case high mark-ups are the rule, making the cost of such input prohibitive for smallholders. Furthermore, as many small scale producers are not registered as vendors, they are obliged to pay VAT on their input purchases. VAT exemption on small packages of agricultural inputs would make them more available to small growers. Market pressure is likely to encourage input manufacturers to supply in pack sizes appropriate for smallholders, but this also requires a retail network able to operationalise the demand.

4.6 Marketing

Agricultural marketing by cooperatives has been an important function in the white large scale agricultural sector. Extensive infrastructure was developed with the assistance of soft loans from the Land Bank, including processing and grain storage facilities, which enabled cooperatives to compete successfully in the market. The special relationship enjoyed by many of the cooperatives, in terms of which they served as agents for the grain control boards, enhanced their ability to achieve relatively high turnover and profitability.

Deregulation of agricultural markets has proceeded swiftly in the past decade, and the one-channel marketing arrangements that dominated agricultural marketing for most of this century are a thing of the past. Market access and flexibility had become so limited as to provoke discontent amongst the very constituency that was intended to benefit from these arrangements: the large-scale white farmer sector. Liberalisation has brought direct and indirect benefit to this sector. It is also argued that deregulation has brought some indirect benefit to smallholders in

the homelands, as the Control Boards have become increasingly unable to regulate the movement, processing and retailing of agricultural produce (Golino, Hobson and Vink in Van Zyl, Kirsten and Binswanger, 1996).

The Liberalisation of international trade in terms of GATT creates opportunities for marketing agricultural products in overseas markets, but also increases competition within the South African market from abroad. Price fluctuations are increasingly a feature of the market, and place additional stresses on the smallholder sector.

4.7 Financial Services

A modern and sophisticated financial system has served the needs of the large scale farming community which have historically been well catered for. Three main sources of funding were available to this sector :

- the private sector commercial banks in cases where credit worthiness was good;
- the Land Bank[8] in cases where credit worthiness was less good; and
- the Agricultural Credit Board where credit worthiness was poor.

It is frequently argued that agricultural credit can enable smallholders to make both the long and short term investments needed for sustainable farming. However, an equally telling argument is that in risk-prone environments credit can lead smallholders into debt and result in the failure of their enterprises. This is particularly true in situations where the smallholder lacks entrepreneurial skills and experience, as in the case of many land reform beneficiaries. Credit can thus be a two-edged sword. The experience in the Machakos District in Kenya is that much development and intensification on smallholder farms took place without the assistance of credit facilities

In the former homelands there was only very limited access to agricultural credit. The provision of credit via the State was largely confined to parastatals, which imposed strict conditions in terms of enterprise selection, and discriminated against women and small growers. The inability of smallholders to use their land as collateral prevented them from gaining access to funds from the commercial banks. Currently, private sector financial services are generally unavailable to Black smallholders.

In these circumstances many smallholders came to rely on traditional savings clubs known as 'stokvels' for seasonal inputs. The experience of individuals in managing their own savings institutions offers an excellent opportunity for development of more robust semi-formal savings and loan institutions.

The Presidential Commission of Enquiry into the Provision of Rural Financial Services (the

[8] Land Bank credit includes direct production credits to farmers, and indirect production credits via the cooperatives.

Strauss Commission) reported in 1996 that lack of access to information about financing options was a major problem for rural people (Strauss Commission, 1996). The Commission proposed that the role of the Post Office be developed as a provider of comprehensive information on government grants, financial packages, and roles of different parastatal and private sector financial institutions.

The Strauss Commission also recommends that the State should foster a greater number of rural financial institutions such as NGOs and community banks. It should also make sure that the existing delivery potential of the Post Office as a financier should be developed, and create incentives for private banks to provide appropriate financial packages for rural people.

In the view of the Strauss Commission the state should not subsidise interest rates for land acquisition, as this would place a strain on the fiscus, increase demand for land and therefore increase land prices without contributing to increased productive worth. The one area where the Strauss Commission was willing to consider subsidisation was in providing commercial institutions with the incentive to provide services to isolated rural communities. This appears to reflect the commercial orientation of the Commission as a whole.

In order to provide production loans to land reform beneficiaries the Strauss Commission recommended risk sharing arrangements, whereby the State (via the Department of Agriculture) undertakes to underwrite loans from commercial lending institutions on a 80:20 basis, guaranteeing the repayment of most of the money in the event of non-payment. This arrangement has been successfully used by the Free State Department of Agriculture in the past season.

Given the past hesitance of private sector financial institutions to assist in credit extension to smallholder farmers, the move towards guarantees would open the door to private sector efficiency and networks, thus promoting greater penetration of rural financing. For the system to be sustainable, the guarantees will need to be designed so as not to undermine the incentive for the private operator to obtain high repayment rates, with perhaps greater tolerance allowed in poor years.

One useful model for credit provision is the Khulani Farmers Union in KwaZulu-Natal. Initially established with NGO assistance with seed money from a donor, Khulani has provided its eleven constituent farmer associations (230 members) with production credit since 1980. Loans to individuals range from R200 to R8,000. With the support of extension officers from the Department of Agriculture, member associations plan their individual credit needs and negotiate loans from the central fund. Loans are only made available once the specific association has repaid its entire loan from the previous season, and the market-rate interest owing. Peer pressure at the Association level ensures that all loans are repaid.

4.8 Conclusions

A striking feature of the environment in which smallholder agriculture operates is the incredibly rapid rate of change, both in policy, and in government institutional linkages affecting agriculture and the rural environment. Although changes in practice may not yet have reached many smallholders, and there are severe doubts about both the capacity, and in some cases the commitment of staff, to implement some of the much needed changes, the rate of change has a number of implications:

- there is little time to learn from experience, and to be able to evaluate the impact and side effects, both on sustainability and equity;
- changes, occurring across a range of sectors and departments, throw up a number of inconsistencies, contradictions and confusions - time, experience and willingness to address errors will be needed to resolve many of these;
- for farmers and service providers to invest in sustainability, confidence in longer term security and profitability is needed - there are therefore trade-offs between the urgent need for radical change and the need to create stable conditions for this investment.

Concerns about contradictions between growth objectives of economic policies, such as GEAR, and the sustainability and equity objectives of other policies are real. Serious efforts are needed to try and achieve appropriate balances and synergy between these different objectives.

Despite having considerable technical agricultural capacity, both in the government and commercial sectors, the ability to harness this for the benefit of smallholders remains weak. Improved links are needed in both directions between farmers and research, research and extension and national and provincial level research. However appropriate policies and institutional arrangements are insufficient in themselves - building practical experience from the bottom-up will be required. Changes in attitudes among many agricultural professionals will be needed ,in order to understand and facilitate more participatory approaches to working with smallholder communities. Some training priorities are:

- **to improve cross-disciplinary skills** - technically competent agriculturalists need to improve skills in participatory approaches, social and economic analysis; social scientists and economists need to improve there understanding of smallholder agriculture and the environment.
- **Training for policy specialists** - to understand the complexity of smallholder agriculture, the importance of local organisation and the effect these have on sustainability.
- **Practical experience "study tours"** - especially for rapidly rising black professionals in the Departments of Agriculture and other Ministries on the realities of smallholder agriculture and sustainability.

There is opportunity to learn from neighbouring countries and the other reports in this series can provide a useful starting point[9]. The curricula of agricultural colleges need to include a broader focus on issues such as participation and facilitation skills, as well as practical work with smallholders.

[9] Separate reports are available on Encouraging Sustainable Smallholder Agriculture in Botswana, Malawi, Namibia, Zambia and Zimbabwe, as well as an executive briefing, overall synthesis report and a book.

Clear policies are needed to ensure that land reform is both equitable and results in sustainable use of resources, some key features are:

- the need to recognise the **diverse objectives of smallholders**, including different balances between on- and off-farm livelihood generation, and to address this diversity as a strength rather than a weakness of the process. Rigid adherence to the concept of 'economic land units' is unlikely to be helpful.
- Because of:
  (a) the diversity,
  (b) the lack of long term follow up and support capacity within state institutions, and
  (c) because participation is essential for community based sustainable management;
  more attention needs to be given to **participatory planning of individual reform initiatives**.
- **Community based management capacity**, particularly where common property resources are involved, are crucial. There is now considerable experience which can be drawn on. Land reform communities managing common property will need both initial facilitation, and longer term support and mentoring. NGOs may be best equipped to provide this. Means need to be found to keep groups managing common property to accountable sizes.
- Relaxation or abolition of **anti-subdivision legislation** should help to provide more flexible availability of land.
- Recognition that if plans, support and the overall environment is appropriate, a **focus on poverty** does not lead to compromises on either sustainability or agricultural productivity.

Improvements in smallholder access to inputs, markets and financial services are all needed. Farmer organisation can help reduce transaction costs for commercial service providers. Reducing barriers to investment in service provision, like the high level of violence in some rural areas, may be more important than specific agricultural interventions. There are a number of potential interventions for government such as 'one-off' grants or tax-breaks to retailers or existing co-operatives expanding into smallholder areas. Schemes like the AGENT Project in Zimbabwe may be appropriate in some areas (Whiteside 1998).

There is potential for financial services to build on existing institutions in rural areas including the informal such as stockvels and CBOs, and the formal such as post offices. Risk sharing by government and commercial providers may encourage more commercial involvement with smallholders without undermining their financial discipline and sustainability.

ANNEX 1 - USEFUL ADDRESSES

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Environment and Development Agency (EDA)
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Farmer Support Group
P Bag X01, Scottsville 3209. Tel. 0331 2606281. Fax. 0331 260 6281.

Institute of Natural Resources (INR)
University of Natal, P. Bag X01, Scottsville 3209.
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Land and Agricultural Policy Centre (LAPC)
Box 243, Wits 2050. Tel. 012 4037272. Fax 012 3396423

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