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GENERAL NOTICE

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NATIONAL DEPARTMENT OF AGRICULTURE



First Edition

ENVIRONMENTAL IMPLEMENTATION PLAN

June 2001

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NATIONAL DEPARTMENT OF AGRICULTURE ENVIRONMENTAL IMPLEMENTATION PLAN

First Edition

EXECUTIVE SUMMARY

Introduction

In terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) national and provincial departments exercising functions which may affect the environment are required to prepare an Environmental Implementation Plan (EIP). This is required of the NDA and the first edition EIP has been prepared accordingly.

Until 1993 institutions supporting agriculture were separated along racial lines, but following the elections of 1994 the former fragmented departments of agriculture were amalgamated into provincial departments (PDAs), incorporating some of the functions of the NDA. Whereas, in the past, the Department of Agriculture catered for the interests of a relatively small number of well-resourced commercial farmers, ensuring self-sufficiency in food production, the focus changed to policy, regulatory, monitoring and coordination activities.

The NDA released the Framework for Sustainable Resource Use and Management in 1999, the purpose of which was to facilitate a coordinated approach to achieving an ecologically and economically sustainable agricultural sector in South Africa. Environmental legislation and policies on sustainable agriculture have resulted in an increased emphasis on the promotion of environment-friendly practices, the control of harmful substances and the conservation of resources through infrastructure development. Agriculture is a strategic area that can facilitate both food security and entrepreneurial development.

A joint Ministry of Agriculture and Land Affairs was established in 1997. Although the Departments remain separate, they report to a single minister. Restructuring has enabled reduction in duplication and securing policy and programme coordination. The strategic role of the Ministry of Agriculture and Land Affairs is to facilitate the attainment of the transformation objectives of land distribution and security of tenure of the landless, and to promote food security, agricultural economic growth and the sustainable use of the natural resources.

Institutional Arrangements

The NDA operates through twenty three directorates, grouped under four programme managers and two chief directors. The directorates are further grouped under three deputy DGs, for Agricultural Development, Agricultural Resources Management and Agricultural Trade and Policy.

The EIP has been developed on a Directorate basis, as officials operate within the structure and can best understand the importance of the environment on their agendas. Although every directorate has some impact on the environment, attention has been focused on those that have a more direct and tangible effect. These directorates are:

- Farmer Settlement and Development
- Business and Institutional Development
- Agricultural Land Resource Management
- Agricultural Water Use Management
- Genetic Resources
- Agricultural Production Inputs
- Plant Health and Quality
- Veterinary Services
- International Trade

Their names alone give some indication of the activities in which they are likely to be involved.

Linkages

Contact with most government departments takes place at different levels, depending on the specific programmes involved. As regards environmental matters, it is especially with the following:

- Department of Environmental Affairs and Tourism (DEAT)
- Department of Water Affairs and Forestry (DWAF)
- Department of Land Affairs (DLA)
- Provincial Departments of Agriculture (PDAs)

There is also ongoing contact with the parastatals, and especially with the Agricultural Research Council (ARC), one of the eight science councils in the South African National System of Innovation. Prior to 1990 the research institutes that constitute the ARC were part of the NDA. The ARC renders a multidisciplinary agricultural service that supports the activities and priorities of the NDA, including support for enforcement of acts, *inter alia* those that address environmental concerns.

International Conventions

South Africa is a signatory to a number of international agreements and conventions aimed at promoting the conservation and sustainable use of threatened environments. These include:

- The Convention on Biological Diversity
- The Convention on Wetlands of International Importance
- The Convention on Migratory Species
- The Convention on Desertification (CCD)
- The United Nations Framework Convention on Climate Change (UNFCCC)
- Agenda 21

Cooperation between the NDA and PDAs

At top level MINMEC Agriculture comprises the National Minister of Agriculture together with the MECs for Agriculture. ITCA (The Intergovernmental Technical Committee on Agriculture) comprises the DG and deputy DGs of the NDA and the Provincial HODs of Agriculture.

As agriculture is a so-called concurrent function, many functions may be shared between the NDA and the PDAs. Responsibilities need to be negotiated with a view to co-operative governance, as well as for structuring the respective EIPs.

Other role players

Because the activities and responsibilities of the different Directorates differ, there is a wide range of organizations, stakeholders and role players involved in drafting legislation and regulations.

Generically these consist of natural and provincial government departments, international organizations, governments in the region, organized agriculture, industry associations, parastatal organizations, tertiary institutions, liaison committees, learned societies, pressure groups, communities, individuals and others.

Legislation

There is a large number of acts for which the NDA is responsible and these are listed. Prominent acts impacting on the environment are the following:

- Abattoir Hygienic Act, 1992 (Act No. 121 of 1992), superceded by the
- Meat Safety Act, 2000 (Act No. 40 of 2000)
- Agricultural Pests Act, 1983 (Act No. 36 of 1983)
- Agricultural Product Standards Act, 1990 (Act No. 119 of 1990)
- Animal Improvement Act, 1998 (Act No. 62 of 1998)
- Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)
- Fertilizers, Farms Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No. 36 of 1947)
- Genetically Modified Organisms Act, 1997 (Act No. 15 of 1997)
- Plant Breeders' Rights Act, 1976 (Act No. 15 of 1976)
- Plant Improvement Act, 1976 (Act No. 53 of 1976)
- Subdivision of Agricultural Land Repeal Act, 1998 (Act No. 64 of 1998)

These acts are discussed individually, in Table 1 of the EIP, in terms of the responsible directorate/s and management and procedures for compliance. Responsibilities for implementation, and involvement of the PDAs, is also given.

Responsibility and capacity for implementation

These points are discussed for the different directorates, virtually all of which have capacity limitations to provide efficient delivery. Data relating to staff available for different functions are provided in a number of cases.

Other national legislation with environmental implications in which the NDA is involved, though not responsible for, is given in Table 2, whereas other formalized actions with environmental implications are given in Table 3. The contents of these tables are not exhaustive, however.

In Table 4 a summary is given of important authorizations/permits that are requirements for certain actions.

Policies, plans and programmes

A number of programmes being carried out by different directorates that relate to environmental management and impact are discussed. These include:

- Integrated development planning
- Land Reform for agriculture development (LRAD) integrated into development
- Community based natural resource management (CBNRM)
- Guidelines for drought and flood management for the Disaster Management Centre
- Special Programme for Food Security
- Combating of weeds and invader plants
- Migratory pests
- National Agricultural Land Resource Monitoring
- Subdivision of agricultural land
- LandCare
- WOCAT (World Overview of Conservation Approaches and Technologies)
- AGIS (Agricultural Geo-referenced Information System)
- Water and Soil Conservation and Utilization
- Key Soil Conservation Works
- Stock Water Drilling Services
- Flood Relief interventions
- Animal Improvement
- Plant Improvement
- Plant Breeders' Rights
- Genetically Modified organisms (GMOs)
- Comprehensive Veterinary Programmes
- Organic Production
- Integrated Wine Production
- Import and Export Control of Agricultural Products
- Provision of high quality plant propagation material and bio-control agents and organisms for research
- Disposal of obsolete pesticides and empty containers
- Provision of practical guides on control of pests and diseases, use of plant growth regulators and herbicides

These programmes were clustered into three generic groups and evaluated in terms of clustered NEMA principles.

- Sustainable Resource Management Programmes
- Regulatory Programmes
- Farmer Settlement/Redistribution of Land Programmes

There was some degree of overlap evident, but this is inevitable.

This evaluation of the programmes in terms of NEMA principles is given in Tables 5.1 – 5.3.

Recommendations

Recommendations for future EIPs, and for increasing environmental awareness and management, are also given on a Directorate basis. The more prominent ones are listed generically here. It is recommended:

- That EIAs be conducted where necessary
- That the LRAD programme be implemented

- That the principles of the DLA-DANCED project, integrating environmental concerns into land reform, be implemented
- That effective guidelines be established for the management of drought, floods and other extreme climatic events
- That an effective Food Security Programme be developed to the advantage of the rural poor and disadvantaged
- That the new Spatial Planning Act to co-ordinate the decentralization process be administered in terms of NEMA principles
- That environmentally friendly pest control be propagated
- That legislation relating to migratory pests be updated
- That international initiatives be expanded and obligations accepted and implemented
- That natural resource monitoring and auditing systems be further developed
- That the LandCare programme be utilized to make all stakeholders aware of their responsibilities of contributing to sustainable utilization of the natural resources
- That community involvement be obtained from planning, and all stages thereafter, in future conservation works and irrigation schemes
- That procedures for dealing with GMOs be diligently applied
- That all regulated actions be technically justified and that the release of exotic organisms and potentially invasive plant species into the environment only be done after wide consultation of all the relevant stake holders
- That organic production be adequately controlled and audited
- That stakeholders be made aware of the environmental implications of the usage of different agrochemicals
- That safety and public health be considered in using agrochemicals
- That international guidelines be adhered to, and contact broadened to mutual benefit
- That regional co-operation be broadened
- That possibilities relating to ISO standards be investigated, through the Joint Working Group on Quality and Environmental Auditing, co-ordinated by the South African Bureau for Standards
- That responsibilities of the different directorates relating to International Conventions be identified and managed
- That the NDA compile an EMP (or EIMP) in future and that legislation be amended by DEAT to make this possible.

Indicators

The identification of appropriate indicators was both challenging and daunting. Not all directorates were able to come up with suitable indicators at this stage. Most directorates are working on their identification and development and it is trusted that this will be more fully addressed in future.

List of Acronyms

AVCASA	Crop Protection and Animal Health Association
AFMA	Animal Feed Manufacturers' Association
AGIS	Agricultural Geo-referenced Information System
AII	Animal Improvement Institute (ARC)
ARC	Agricultural Research Council
BATAT	Broadening Access to Agriculture Thrust
CBNRM	Community Based Natural Resource Management
CCD	Convention on Desertification
CDE	Centre for Development and Environment (Berne, Switzerland)
CEC	Committee for Environmental Co-ordination
CITES	Convention on International Trade in Endangered Species
CODEX	Alimentarius (International Food Safety Organization)
D M&E	Department of Mineral Affairs and Energy
DACST	Department of Arts, Culture, Science and Technology
DEAT	Department of Environmental Affairs and Tourism
DLA	Department of Land Affairs
DOD	Department of Defence
DOH	Department of Health
DOL	Department of Labour
DTI	Department of Trade and Industry
DUS-test	(Distinguishability, Uniformity and Stability)
DWAF	Department of Water Affairs and Forestry
EIA	Environmental Impact Analysis
EIP	Environmental Implementation Plan
EMP	Environmental Management Plan
FAO	Food and Agricultural Organization of the United Nations
FSD	Farmer Settlement and Development Directorate
FSSA	Fertilizer Society of South Africa
GEAR	Growth, Employment and Redistribution
GIS	Geo-referenced Information System
GMO	Genetically Modified Organism
GNU	Government of National Unity
HRD	Human Resources Directorate
IMCO	National Inter-departmental Structure on Regional/Provincial Control
INDAC	Interdepartmental Advisory Committee for Safeguarding Man Against Poisons
IPPC	International Plant Protection Convention
ISCO	International Soil Conservation Organization
ISCW	Institute for Soil, Climate and Water (ARC)
ISRIC	International Soil Reference and Information Centre
ITCA	Intergovernmental Technical Committee on Agriculture
L & APC	Land and Agriculture Policy Committee
LDO	Land Development Objectives
LRAD	Land Redistribution and Agricultural Development

MINMEC	(Committee of National Minister of Agriculture with Provincial MEC's for Agriculture)
NAFU	National African Farmers' Union
NDA	National Department of Agriculture
NEMA	National Environmental Management Act
NGDS	National Growth and Development Strategy
NGO's	Non Governmental Organizations
NIDS	National Inter-departmental Structure on Border Control
NOAA	National Oceanic and Atmospheric Administration
OBCO	Operational Committee : Points of entry
OBP	Onderstepoort Biological Products
OFASA	Organic Fertilizer Association of South Africa
OIE	(World Animal Health Organization)
PDA's	Provincial Departments of Agriculture
PFI	Pet Food Institute of Southern Africa
PIP	Presidential Imperative Programme
PPRI	Plant Protection Research Institute (ARC)
PRA	Pest Risk Analysis (elsewhere refers to Participative Rural Appraisal)
PU for CHE	Potchefstroom University for Christian Higher Education
RDP	Reconstruction and Development Programme
SADC	Southern African Development Community
SANSOR	South African National Seed Organization
SAPCA	South African Pest Control Association
SAQA	South African Qualifications Authority
SETA	Sector Education Training Authority
SHE	Safety and Environment Group (of AFCASA)
SPS	Sanitary and Phytosanitary Measure
SWC	Soil and Water Conservation
UCT	University of Cape Town
UN-CBD	United Nations Convention on Biodiversity
UNFCC	United Nations Framework Convention on Climate Change
UOVS	University of the Orange Free State
UP	University of Pretoria
UPOV	International Union for the Protection of New Varieties of Plants
WHO	World Health Organization
WOCAT	World Overview of Conservation Approaches and Technologies
WTO	World Trade Organization

CHAPTER 1 : MANDATE AND FUNCTIONS

1.1 Introduction

The National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998) sets out to provide for co-operative environmental governance by establishing principles for decision making on matters affecting the environment; institutions that will promote co-operative governance; procedures for co-ordinating environmental functions exercised by organs of state; and to provide for matters connected therewith.

NEMA requires that national and provincial departments exercising functions which may affect the environment, in terms of Schedule 1 of the Act, prepare an Environmental Implementation Plan (EIP) and to monitor and review their implementation on a regular basis. The NDA is listed in Schedule 1 and is therefore required to prepare an EIP.

During the development and finalization of this EIP, it became clear that it would actually be more appropriate and accurate, in evaluating the environmental implications of the activities of the NDA, to prepare an EIMP. This will be considered in drawing up a second edition document.

Much of the activities of the NDA are management functions, with definite environmental implications. The PDAs implement many activities, so that environmental impacts become more apparent on that level. It is important that all aspects be captured, on both national and provincial level, to ensure environmental integrity.

In this, the first edition EIP for the NDA, the requirements of the Act and the guidelines provided by the Department of Environmental Affairs and Tourism (DEAT) have been incorporated as far as possible.

1.2 Constitution of the RSA

Section 24 of the Bill of Rights in the Constitution of the Republic of South Africa states:

“..... Everyone has the right:

- (a) to an environment that is not harmful to their health or well-being;
- (b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that –
 - (i) prevent pollution and ecological degradation;
 - (ii) promote conservation; and
 - (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development

From this it is clear that it is vitally important to ensure environmental integrity.

1.3 Background to the National Department of Agriculture (NDA)

Until 1993 institutions supporting agriculture were separated along racial lines. With the elections of 1994, the Government of National Unity (GNU) was established and the former fragmented departments of agriculture were amalgamated into provincial departments, also incorporating some of the functions of the NDA.

The adoption of the Reconstruction and Development Programme (RDP) as the fundamental policy of the GNU meant realignment of roles and objectives of government departments, including the NDA. This emphasized the aims of the NDA as being:

“to ensure equitable access to agriculture and promote the contribution of agriculture to the development of all communities, society at large and the national economy to enhance income, food security, employment and the quality of life in a sustainable manner”.

Other initiatives were the National Growth and Development Strategy (NGDS) released early in 1996, followed later in the year by the framework for Growth, Employment and Redistribution (GEAR). Both the NGDS and the GEAR are documents setting out national strategies to build the economy to higher levels of growth, development, employment and equity, with which Agriculture needs to comply.

Also of importance is the Broadening Access to Agriculture Thrust (BATAT) which serves to indicate ways through which the access of small farmers to services could be increased.

In the past, the Department of Agriculture catered for the interests of a relatively small number of well-resourced commercial farmers, to ensure national self-sufficiency in food production. Subsistence farmers in previously disadvantaged areas were serviced by development agencies, which were mostly not market orientated. After 1994, the Department's role was redefined as being a national responsibility with a focus on policy, regulatory, monitoring and coordination activities in the agricultural sector.

Major external policy developments also dictated changes in the sector. Deregulation meant a change from production-driven to market-led activities. This has raised the importance of domestic markets and the need for producers to have up-to date knowledge on product quality. South Africa's entry into global markets has necessitated negotiation and administration of international trade agreements, such as that with the European Union, and representation on various multilateral and bilateral fora where international standards and policies are set. The Department engages actively in various negotiation processes, including the renegotiation of agricultural conditions through the World Trade Organisation's structures.

International trade has also resulted in the industry being exposed to increased economic, sanitary and phytosanitary risks – risks associated with animal and plant diseases. The recent outbreak of foot-and-mouth disease illustrates these risks. The regulation and administration of imports are therefore of critical importance. Legislation, regulations and access control structures must all be reviewed to deal with the many challenges posed by the free flow of goods across international boundaries, especially because of environmental implications.

A number of policy related discussion documents have been prepared in the interim.

The White Paper on Agriculture (1995), considered a draft-working document drawing on both an agricultural policy document developed by the Department of Agriculture in 1993 and the Agricultural Policy Paper of the Land and Agriculture Policy Committee (L & APC) of 1994, was released by the Department of Agriculture.

Under a section on Sustainable Utilization of Natural Resources, the government recognized its responsibility to provide assistance and law enforcement for the appropriate management of the natural agricultural resources while maintaining a balance between the basic needs of people and the promotion of an all-inclusive environmental ethic.

It noted that environmental damage in rural areas is on the increase as a result of incorrect irrigation methods, the excessive use of pesticides and fertilizers and the pollution of surface and groundwater by industries, power stations and mines. Rural biodiversity is also threatened by the spread of exotic and invasive plant species, the increasing use of land for forestry and the destruction of indigenous forests by agriculture.

In 1998 a Discussion Document on Agricultural Policy in South Africa was released. Although not officially accepted, this serves as a reference. This relatively comprehensive document also highlighted the importance of conserving agricultural natural resources, *inter alia* through enhancing efficiency in irrigation, promoting sustainable resource use and meeting international obligations.

The National Department of Agriculture Framework for Sustainable Resource Use and Management was released in 1999. The purpose of this Framework is to facilitate a coordinated approach to achieving an ecologically and economically sustainable agricultural sector in South Africa. The Framework provides an agreed goal for sustainable agriculture in the country, mutual objectives, and strategies which should guide a wide range of stakeholders towards this goal. It also provides a framework within which individual agencies and interest groups can develop specific position statements and action plans.

The NDA is involved, together with other national departments, in a number of initiatives that are geared to improving opportunities and well-being for the rural poor. These include the "Integrated and Sustainable Rural Development Strategy" that is co-ordinated in the President's office, as well as the Land Reform programme of the Department of Land Affairs that involves land redistribution, restitution, and tenure reform to facilitate the landless and those who have been removed from land under a former dispensation in acquiring land. The related White Paper on South African Land Policy promotes the incorporation of environmental issues and the reduction of environmental risk.

In terms of the Integrated Sustainable Rural Development Strategy, the Department is responsible for the settlement of African farmers, the provision of appropriate support services, the development of black entrepreneurs and the drive to make the industry more representative of the population. The Department will implement the following priority programmes in the next few years:

- Establish a farmer settlement programme
- Improve agricultural support services (research, technology, agricultural finance and marketing information)
- Develop appropriate infrastructure

- Facilitate trade development and support
- Implement appropriate human resource development programmes
- Develop and implement a framework to support food security and facilitate sustainable natural resource management and use

Information is critical to the economic development of the agricultural industry. The Department is now at an advanced stage of setting up a national Agricultural Geo-referenced Information System that will be able to provide answers to farmers' questions on a 24-hour basis. Special emphasis is placed on the availability of information in electronic format and in the form of info-packs.

Accurate and timely information can also mitigate the effects of natural disasters or change in trade trends. National agricultural risk management programmes will be developed further to include epidemiological surveys and early warning and disaster management systems.

Environmental legislation and policies on sustainable agriculture have meant an increased emphasis on the promotion of environment-friendly practices, the control of harmful substances and the conservation of resources through infrastructure development.

This Department has in the past few years transformed itself from an internally focused organization to one which operates globally and nationally, in collaboration with the provincial departments of agriculture. It will increasingly focus on national regulatory services and development facilities and support. Agriculture remains a strategy area that can facilitate food security and entrepreneurial development, given adequate supporting infrastructure and complementary policies.

A joint Ministry of Agriculture and Land Affairs was created in 1997. The Department of Agriculture and Land Affairs remain separate but are both accountable to the Ministry. The restructuring has enabled the departments to reduce duplication and secure policy and programme coordination. The strategic role of the Ministry of Agriculture and Land Affairs is to facilitate the attainment of the transformation objectives of land distribution and security of tenure of the landless, and to promote food security, agricultural economic growth and the sustainable use of natural resources.

It is against this dynamic background that the NDA carries out its mandate, while giving attention, *inter alia*, to environmental implications of its policies and actions.

1.4 Mandate, Mission and Strategic Goals

The MANDATE of the National Department of Agriculture is to guide and support capacity building, sustainable resource use, production, trade and research in agriculture in order to maximize the contribution of the agricultural sector to economic growth, equity and social development in a sustainable manner.

The mission of the Department is to provide a national governance service towards sustained economic development of South African agriculture in order to enhance quality of life.

The STRATEGIC GOALS were identified as the following at the NDA Lekgothla of September 1999:

- to promote equitable access to resources for agricultural development
- to enhance global competitiveness of agriculture
- to ensure sustainable resource use
- to promote black entrants in agriculture
- to achieve departmental service excellence and ensure consumer confidence in agricultural products

Similar strategic planning takes place in all directorates, as well as at programme or chief directorate level, on an annual basis.

Certain directorates are more involved in activities that impact on the environment than others. This is discussed in more detail in Chapter 2.

CHAPTER 2 : INSTITUTIONAL ARRANGEMENTS

2.1 Introduction

The institutional arrangements, largely relating to environmental aspects, are discussed in this chapter. An overview of the departmental framework is firstly discussed, followed by details of formal and informal linkages with other state departments and organizations.

2.2 The National Department of Agriculture

An organogram of the NDA is given in Figure 1.

The top management of the department is divided into three branches:

- Agricultural Development
- Agricultural Resources Management
- Agricultural Trade and Policy

These branches are supported by four programmes, two chief directorates and their respective directorates, of which there are twenty three.

The approach of developing the EIP at Directorate level was adopted after careful consideration. The activities of the different Directorates differ considerably, and the Department is managed through these Directorates. In order to focus the attention of officials on their involvement in activities of environmental concern, this was considered the best way forward.

Although every directorate has some impact on the environment, attention is focused on those that have a more direct and tangible effect.

2.2.1 Programme : Agricultural Support and Development

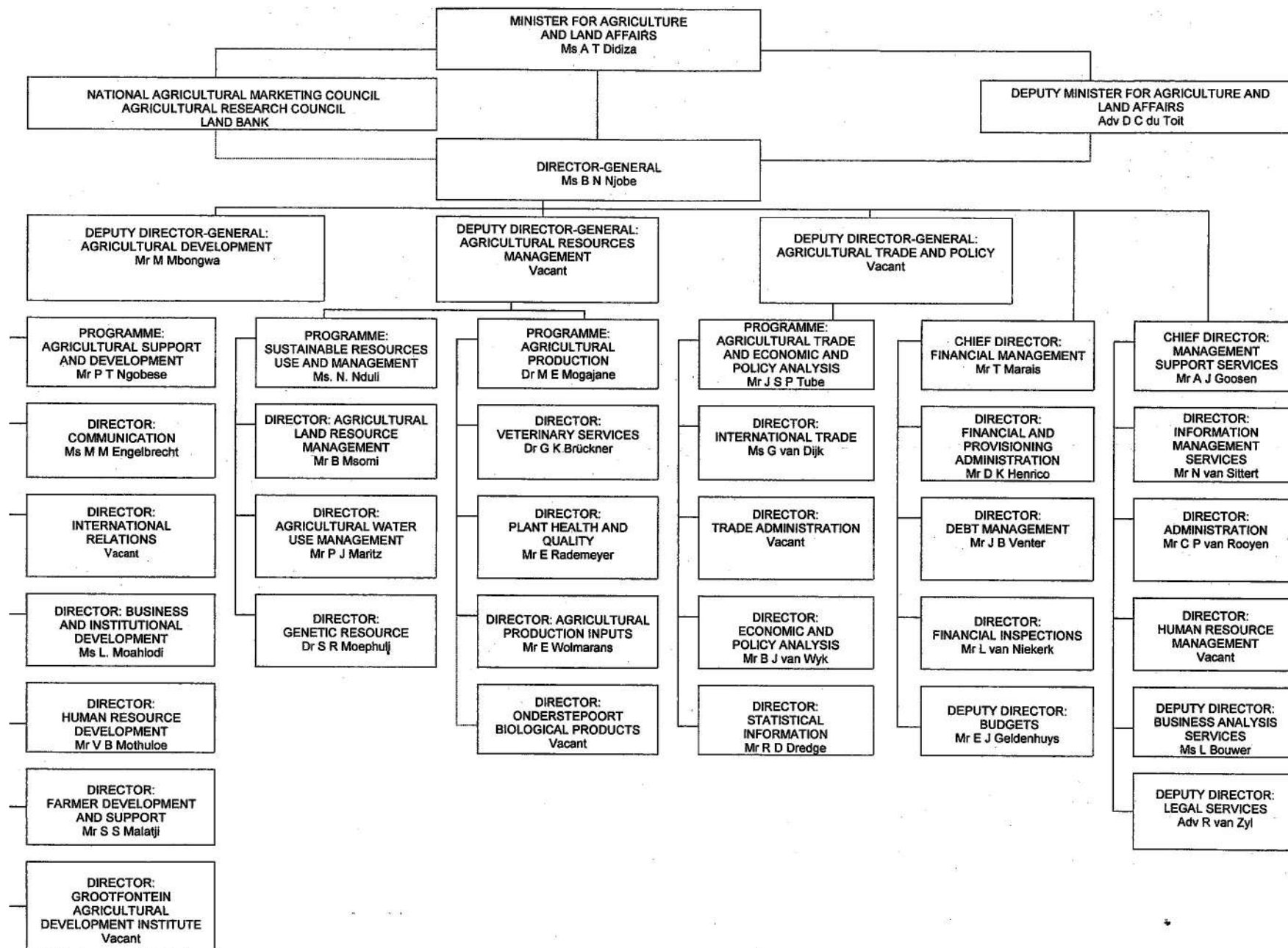
Aim and Activities

- Develop policy, norms and standards in support of agricultural development
- Render a communication service
- Facilitate, support and coordinate international relations regarding agricultural matters
- Facilitate the development of human capital in the agricultural sector
- Ensure access to land reform and farmer support

2.2.1.1 Directorate Farmer Settlement and Development

The aims and activities of this Directorate are to:

- Facilitate the development of effective farming models through investigations and economic evaluations. Environmental issues will be taken into account as the models are designed.
- Formulate action plans to facilitate, co-ordinate and support projects.
- Facilitate the strengthening of institutional systems for delivery of land redistribution and agricultural development.
- Assess the impact of farmer support programmes (technical, economic, socio-cultural, institutional, environmental).



Promote the application of developed farming models.

- Facilitate the development of Farmer Settlement Policy.
- Achieve interim leasing and care-taking of State Agricultural Land.
- Ensure general administration of State Agricultural Land in accordance with departmental policies and lease contracts.

2.2.1.2 *Directorate Business and Institutional Development*

The aims and activities of this directorate are to:

- Build a rural financial services system that is based on locally owned financial services cooperatives
- Support the development of agricultural enterprises especially for black people
- Build a national cooperative movement, particularly for poorer farming and rural producers
- Institute a special programme for food security for poor rural and peri-urban producers who cannot participate in the mainstream commercial environment
- Build a national agricultural disaster management system to ensure that agricultural enterprises will recover, grow and develop after natural disasters

2.2.2 **Programme : Sustainable Resources Use and Management**

Aim and activities

- Regulate, promote and coordinate the conservation of agricultural land resources
- Manage agricultural water conservation and utilization
- Regulate and promote the availability of high-quality plant and animal material

2.2.2.1 *Directorate Agricultural Land Resource Management*

The aims and activities of this Directorate are to:

- Develop policy, norms, standards and guidelines for the conservation of natural resources.
- Develop and maintain a national agricultural resource audit
- Manage a conservation GIS
- Conduct inspection services in terms of the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983).
- Reclaim and rehabilitate highly degraded land (including declared weeds and invasive plants).
- Authorize the subdivision of agricultural land.
- Control and combat migratory pests.

It is clear from the above that this Directorate plays a key role in managing and impacting on the environment.

2.2.2.2 *Directorate Agricultural Water Use Management*

The aims and activities of this Directorate are the following:

- Handle the engineering aspects of sustainable natural agricultural resource use

- Deal with the interaction between the natural resources and human energy, with the aim of promoting agricultural production without depleting the natural resources. In fulfilling its duty the Directorate is involved in three major activities:
- Establishing policy, norms and standards in respect of engineering technology which will enable producers to use soil and water while retaining and improving the productive capacity of the resources;
- Rendering a drilling service to promote the development of underground water resources in providing water for livestock. This facilitates the management of grazing land, which is a critical factor in ensuring sustainability;
- Key conservation works are planned, designed and constructed to protect, stabilize and rehabilitate degraded land where such measures are in the national interest.

2.2.2.3 Directorate Genetic Resources

The aims and activities of this Directorate are to:

- Develop and publish legislation aimed at improvement of genetic material
- Develop and publish legislation aimed at the protection of intellectual property rights related to genetic resources.
- Develop, implement and coordinate strategies and programmes for conservation and sustainable utilization of genetic resources for food and agriculture.
- Set norms and standards for effective use of plant and animal genetic resources.
- Regulate import and export of genetic material.
- Provide and regulate the genetic improvement of livestock
- Promote and regulate livestock identification
- Draft regulations, codes and guidelines for the Animal Protection Act
- Develop aquaculture policy
- Carry out inspections on welfare of animals at various facilities
- Conduct plant genetic auditing
- Ensure genetic authenticity of plant and propagating material
- Ensure physical and physiological quality of seed
- Determine and regulate norms and standards for genetically modified organisms
- Facilitate education programmes to promote the sustainable use of genetic resources, with special reference to indigenous and locally developed breeds and landraces

2.2.3 Programme : Agricultural Production

Aims and Activities

- Manage the programme for the development, implementation and auditing of national policies for Veterinary Services and Agricultural Production Inputs
- Manage the programme for the production and sale of veterinary biological products by Government
- Undertake corporate representation for the NDA in the field of agricultural production
- Undertake intergovernmental liaison on these subjects

2.2.3.1 *Directorate Veterinary Services*

The aims and activities of the Directorate are to:

- Develop and audit policy, norms, standards and guidelines for animal disease control and surveillance systems, animal disease and veterinary public health schemes, meat hygiene and food safety inspection services, and veterinary laboratory services.
- Establish norms and standards to maintain and manage a veterinary risk management service.
- Develop and maintain epidemiological and geographical information data on animal and food-borne diseases.
- Develop, audit and maintain norms, standards and guidelines for occupational-directed technical training.
- Develop, regulate and audit norms, standards and guidelines for the control over the import and export of animals and animal products.
- Maintain close ties with international standards setting organizations for the development and negotiation of sanitary standards for the import and export of animals and animal products and delivery of veterinary services.

2.2.3.2 *Directorate Plant Health and Quality*

The aims and activities of this Directorate are to:

- Control the import and export of plants, plant products and regulated articles in order to prevent the introduction of certain agricultural pests and diseases and control thereof.
- Develop quality norms and standards for various agricultural products destined for either the local or export markets.
- Prescribe legislation and administer various Acts.
- Maintain close ties with many local agricultural industries and is an active member of various international organizations.
- Reduce phytosanitary, plant product sanitary, plant product quality and animal product quality risks.

2.2.3.3 *Directorate Agricultural Production Inputs*

The aims and activities of this Directorate are to:

- Regulate the registration of fertilizers, farm feeds, agricultural and stock remedies, as well as sterilizing plants and pest control operators.
- Render a technical advisory service to the Registrar of Act No. 36 of 1947

2.2.4 **Programme Agricultural Trade and Economic and Policy Analysis**

Aims and Activities

- Promote South Africa's agricultural trade interest by:
Negotiating multilateral and bilateral trade agreements
Providing analysis of and advice on the effects of trade agreements on domestic and marketing

Supporting trade-promoting initiatives

- Promote an international competitive and diverse agricultural sector by providing:
Economic analyses and advice on agricultural policy issues
Analysis and advice on the performance, growth and diversity of the agricultural sector
- Support the economic analytical processes by:
Generating, collating, verifying, maintaining and disseminating statistics on agriculture and food security

2.2.4.1 *Directorate International Trade*

The aims and activities of the directorate are to:

- Analyse and develop international trade policy
- Advise on agricultural trade
- Implement trade agreements
- Monitor trade
- Participate in trade negotiations regarding agriculture
- Promote international trade initiatives

Trade can be influenced by environmental conditions such as quality standards and residue levels. These would, however, be addressed by other directorates (especially Plant Health and Quality). The Directorate International Trade does not administer or implement any legislation regarding the environment *per se*.

2.2.5 *Grootfontein Agricultural Development Institute*

Transferred from the Northern Cape PDA to the NDA in early 2000, the Grootfontein ADI has two functions, namely research and training. Pasture research concerns stocking rates and camping systems on Karoo vegetation, as well as on suitable cultivated pastures. Animal research is related to the management, breeding and adaptation of livestock to semi-desert areas and has direct practical applications. Sustainable utilization of the natural resources in this fragile environment has important implications. This is furthermore an illustration of the importance of integrating environmental concerns of the NDA with those of the PDAs as discussed later in section 2.3

2.3 **Linkages**

2.3.1 **General Introduction**

Linkages with a number of government departments and organizations can be regarded as generic, although there are also quite specific ones. Attention is mainly given to linkages where environmental concerns are of particular importance.

Contact at different levels with representatives of at least the following government departments takes place:

- Department of Environmental Affairs and Tourism (DEAT)
- Department of Water Affairs and Forestry (DWAF)
- Department of Health (DOH)

- Department of Land Affairs (DLA)
- Department of Mineral Affairs and Energy (DM & E)
- Department of Trade and Industry (DTI)
- Department of Defence (DOD)
- Department of Labour (DOL)
- Provincial Departments of Agriculture (PDA's)

The main inter-governmental committee co-ordinating environmental matters is the Committee for Environmental Co-ordination (CEC), with representation at Director General level, under leadership of DEAT.

There is also ongoing contact with the parastatals, and especially with the Agricultural Research Council (ARC). The ARC is a statutory parastatal body, established in terms of the Agricultural Research Act, 1990 (Act No. 86 of 1990). The ARC is one of eight Science Councils in the South African National System of Innovation. Prior to 1990 the research institutes that constitute the ARC were part of the National Department of Agriculture. The ARC has since undergone considerable transformation and consolidation. Through a country-wide network of research institutes, the ARC renders a multidisciplinary agricultural service that supports the activities and priorities of the NDA, including support for the enforcement of a number of acts, *inter alia* those that address environmental concerns.

2.3.2 International Conventions

South Africa is a signatory to a number of international agreements and conventions aimed at promoting the conservation and sustainable use of threatened environments.

The lead agency to give substance to these is the Department of Environmental Affairs and Tourism, but the agricultural sector, utilizing more than 80% of the land surface of South Africa, is the major role player in ensuring environmental integrity. The most relevant conventions are:

- The Convention on Biological Diversity in terms of which the country is required to protect biological diversity and to formulate and implement national policy in this regard.
- The Convention on Wetlands of International Importance (the Ramsar Convention), which requires measures to protect wetlands from detrimental human activities.
- The Convention on Migratory Species (the Bonn Convention) which provides for agreements between states to cooperate on the protection of species such as migratory raptors and water birds.
- The Convention on Desertification (CCD), which is directed at preventing the spread of desertification.
- The United Nations Framework Convention on Climate Change (UNFCCC).
- Agenda 21, which is a United Nations framework directed at promoting sustainable development worldwide.

2.3.3 Co-operation between the NDA and the PDAs

Top level co-operation is achieved through the following committees:

- **MINMEC Agriculture**
This is the forum for the National Minister of Agriculture together with the MECs for Agriculture. Its roles and responsibilities include:
 - Setting broad policy guidelines, strategies and priorities; and
 - Reviewing and approving overall recurrent budget allocations.
- **ITCA (Intergovernmental Technical Committee on Agriculture)**
This is the technical and administrative arm of MINMEC, and the Director-General is the principal executing officer.

Composition

- Director-General (NDA)
- Deputy Directors-General (NDA)
- Provincial Heads of Departments (Agriculture)

Its roles and responsibilities include:

- Co-ordinating provincial and national programmes (e.g. LandCare); and
- Recommending national policy guidelines, priorities and strategies.

These bodies meet regularly and handle matters related to their mandates, including those with environmental concerns and implications. ITCA also has several sub-committees that function on a more specific basis, such as for LandCare and farmer support.

• The NDA and the PDAs

Effective contact between the NDA and the PDAs is considered very important, as agriculture is a concurrent function. This means that many functions may be shared and therefore responsibilities need to be negotiated with a view to co-operative governance.

The NDA has offices in the provinces, for specific functions, whereas other functions are delegated to provincial level. In many cases the NDA and PDA have offices in the same buildings. In the case of natural resource monitoring, for example, the Directorate of Agricultural Land Resource Management has regional officers to implement the provisions of the Conservation of Agricultural Resources Act, 1983, who interact with the functional staff of the agricultural and environmental sectors of the provinces. In the case of plant health and quality, representatives of the NDA are stationed in the provinces to ensure compliance with standards and provisions under the Agricultural Pests Act, 1983 and the Agricultural Products Standards Act, 1990. With agricultural inputs, inspectors of the NDA, stationed at five regional offices, ensure compliance with regard to agrochemicals, especially fertilizers, and farm and pet feeds.

There are other examples, and these are discussed under the different directorates in the following section as well as in Table 1. These linkages need to be clearly established for the PDAs and the NDA to harmonize their respective EIPs.

- EXCO (Executive Committee)

This committee meets on a regular basis and comprises the Director General, Deputy Directors General, Chief Directors and Programme Managers of NDA.

2.3.4 Individual Directorates

2.3.4.1 Introduction

Because of the considerable differences between activities and responsibilities of the various directorates, the more important institutional arrangements are discussed under each of the directorates identified as being possible contributors to environmental issues.

2.3.4.2 Directorate Farmer Settlement and Development

- Land Redistribution and Agriculture Development (LRAD)

The Farmer Settlement and Development Directorate (FSD) has among its functions, the settlement of farmers on land, especially the previously disadvantaged. This has necessitated a series of linkages with inside and outside structures that are concerned with the settlement of farmers.

One of the products of interaction with other stakeholders in the LRAD Programme. The LRAD (Land Redistribution for Agricultural Development) is a sub-programme of the Land Redistribution Programme of the Department of Land Affairs and has been developed in conjunction with the National Department of Agriculture. This involves settlement of farmers on land for agricultural purposes and considers their development and sustainability of the projects.

- External linkages exist with the DLA and other departments connected to the PDAs e.g. District Councils, Public Works, DEAT, etc.
- Direct linkages with the PDAs and PDLAs
- Linkages with most NDA directorates that have a role to play in priority functions (HRD, BID, Communications, Genetic Resources, Agricultural Land Resource Management etc. and the ARC).

2.3.4.3 Directorate Business and Institutional Development

- International Organizations
FAO (Food Security Vulnerability Mapping System)
SADC (Regional Early Warning System)
- National Departments
Department of Water Affairs and Forestry (DWAF) (Floods)

Department of Environmental Affairs and Tourism (DEAT)
 Department of Health (DOH) and Department of Public Works
 Department of Provincial and Local Affairs
 (Disaster Management Centre)

- Provincial Departments
 Especially PDA's (SPFS – Special Programme on Food Security)
- NDA
 Directorates Agricultural Land Resource Management and Statistical Information

2.3.4.4 *Directorate Agricultural Land and Resource Management*

- International Organizations

FAO (WOCAT, SOTER/ALES)
 ISRIC (WOCAT, ALES)
 CDE (WOCAT)
 SADC (Migratory Pests, Early Warning Systems).

- National Departments

Department of Water Affairs and Forestry (DWAF) (Alien vegetation including declared water weeds. Water Use Licensing Committees under the new National Water Act, 1998, including representation on stream flow activity license advisory committees. Liaison on matters relating to commercial forestry, community forestry and support services, urban community forestry and natural forest management and sustainable forest management in general).

Department of Minerals and Energy (DM&E) (Comment on EMP's for mining activities in terms of Minerals Act. Also consider rehabilitation standards prior to mine closure. Environmental forums for mining activities).

Department of Environmental Affairs and Tourism (DEAT) (Implementation of Section 21 of Environment Conservation Act of 1989 with regard to certain activities listed as potentially detrimental to the environment and also controlled under the Conservation of Agricultural Resources Act of 1989 – for example the cultivation of virgin land. Normally done in co-operation with the provincial departments responsible for Agriculture and the Environment. Integrated Catchment Management under new Water Act, Peat Working Group).

- Provincial Departments of Agriculture

- Provincial Departments responsible for Agriculture (PDAs) – Liaise on regular basis regarding combined inputs towards sustainable land use and soil conservation matters (monitoring, auditing).
- Provincial Environmental Conservation Agencies
- Provincial LandCare Advisory Forums

- AGIS. AGIS is a Working Group of the National Agricultural Technical Committee for Information Management (NATCIM) which serves as the coordination body between the NDA, the nine provincial departments dealing with agriculture as well as the ARC. The need for coordination with other National Departments is presently being addressed via the South African Government's IT Agency (SITA), the National Spatial Information Framework (NSIF) and the South African Integrated Spatial Information System (SA-ISIS) initiative.

- Organized Agriculture

Informal liaison as the need arises:

- Agri SA (Small Grain Producers : Red-billed Quelea)
- NAFU
- Provincial Agricultural Unions
- District Farmers' Associations
- Conservation Committees
- Commodity Groups

- Others

Environmental Fora

Working for Water

ARC : PPRI (Biological control, invader species)

ARC : ISCW (WOCAT, Natural resource monitoring)

Conservancies (Migratory Pests)

NGOs

Poison Working Group (Private watchdog representing concerned public)

National Parks Board (Migratory pests, invasives)

Committees : Numerous e.g.

Peat Working Group

Peat Forum

Noxious Aquatic Weeds Committee

Universities

PU for CHE (WOCAT)

UCT – Avian demography unit

Others

2.3.4.5 Directorate Agricultural Water Use Management

- International Organisations

- International Commission for Irrigation and Drainage (ICID) (through the South African National Committee for Irrigation and Drainage (SANCID))
- International Water Management Institute (IWMI)
- Global Water Partnership (GWP) (Through the South African Water partnership (SAWP))

- National Departments
 - Department of Environmental Affairs and Tourism (DEAT) (National Committee on Climate Change)
 - Department of Water Affairs and Forestry (DWAF) (Agricultural Water Liaison Committee) (ad hoc steering committee – Catchment Management, Water utilization, Agricultural Water Demand Management)
 - Department of Land Affairs (Chief Directorate: Surveys and Mapping)
- Provincial Departments of Agriculture (PDAs)
- NDA

Close co-operation with the Directorate Agricultural Land Resource Management
- Agricultural Research Council
- Liaison Committees

An efficient system of stakeholder involvement is in place:

 - Agricultural Engineers' Forum : NDA, PDAs and ARC
 - Agricultural Water Liaison Committee : NDA and DWAF
 - Irrigation Advisory Committee : PDAs and NDA
 - ITCA Working Groups : within NDA
- Water Research Commission (WRC) – project steering committee and research liaison committees.
- Organised agriculture – Agri SA Committee for Water Affairs

2.3.4.6 Directorate Genetic Resources

- International Organizations

FAO (Livestock. Domestic Animal Diversity Information System - consultation re international breeds. International undertaking on Plant Genetic Resources for Food and Agriculture).

SADC (Livestock sector – import and export of farm animal genetic material project on management of farm animal genetic resources SADC. Plant Genetic Resource Centre (SPGRC). Crop sector of Food, Agriculture and Natural Resources. (FANR)).

UPOV – International Union for the Protection of New Varieties of Plants (South Africa is a member country and is therefore, entitled to grant Plant Breeders' Rights to new varieties originating from any other member country).
- CBD (Convention on Bio-Diversity)
- WTO TRIPs (Trade Related aspects of Intellectual Property Rights Agreement)
- SPS (Sanitary and Phyto-Sanitary) Agreement

- ISTA (International Seed Testing Association)
- OECD (Organisation of Economic Cooperation and Development)
- National Departments

DEAT (Importation and evaluation of aquatic species and exportation of game species on game farms that are CITES listed).

Interdepartmental Executive Council assessing Genetically Modified Organisms (GMOs).

Consisting of representatives of the following national departments:

NDA, Health (DOH), Arts, Culture, Science and Technology (DACST), Labour (DOL), Environmental Affairs and Tourism (DEAT) and Trade and Industry (DTI), and advised by an advisory committee of experts in different fields.

- NDA
Link with Directorate Veterinary Services re the importation of breeds.
- Others
ARC-AII (Evaluation of new breeds)

SA Stud Book (Importation and Exportation of Genetic material)

Aquaculture Association (Importation of aquatic species)
Advisory Committees on GMOs

- Universities
UP, UOFS (Evaluation of new breeds)
- National Plant Genetic Resources Committee
- SANSOR (South African National Seed Organization) (Certification of Seed).
- Other certification schemes

2.3.4.7 Directorate Veterinary Services

- International Organizations
 - OIE (World Organisation for Animal Health). Annual Congress. Deals *inter alia* with control measures
 - CODEX Alimentarius – joint FAO/WHO Food Safety Programme.
- NDA – various directorates
- DOH
 - National CODEX contact point
 - Food control

- PDAs
 - ITCA Working Group (co-operation between NDA and PDAs)
 - Directorates of Veterinary Services
- Others
 - ARC (OVI)
 - National Faculty of Veterinary Sciences
- Organized agriculture on an *ad hoc* basis
- Directorate Genetic Resources - importation and export of breeds. Certification of donor animals as collection centers for genetic material.

2.3.4.8 Directorate Plant Health and Quality

- International Organizations
 - IPPC (International Plant Protection Convention) and WTO-SPS
 - Signatory member, participation in drafting and adopting international standards and guidelines – e.g. GMOs, Bio-safety and Invasive species.
- National Departments

DEAT (Import and export control, provision of high quality plant propagation material and bio-control agents and organisms).
- Provincial Departments

Provincial Nature Conservation (PNC). (Where actions may have an impact on the environment).
- NDA

Directorates of Genetic Resources, Agricultural Land Resource Management and Agricultural Production Inputs.
- Others

ARC - Various institutes
Universities - several
Wine and Spirit Board (Establishment of Schemes)
Certification Bodies (Organic Production) – in development stages
Organic Production Organisations

2.3.4.9 Directorate Agricultural Production Inputs

- International Organizations
 - PIC (Prior Informed Consent) for moving hazardous pesticides across borders – FAO / WHO
 - CODEX Alimentarius – Codex Committee on Pesticide Residues. Joint FAO/WHO programme on POP's (Persistent organic pollutants)

- National Departments
 - Department of Labour (DOL)
 - Department of Health (DOH)
 - Department of Environmental Affairs and Tourism (DEAT)
- Standing Interdepartmental Advisory Committee for Safeguarding Man Against Poisons (INDAC). The following are represented: NDA, DOH, DEAT, DOL, DOH, DWAF, ARC, Onderstepoort Veterinary Faculty.

Regular two-monthly meetings of the Standing Committee are held, at which recommendations are made to the Registrar in terms of the Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No. 36 of 1947) for approving registrations of pesticides taking into account the product concerned, its proposed use, maximum residue limits and its possible environmental impact. The labeling of pesticides addresses anti-pollution measures.

- Industry Associations
There is formalized high-level representation by the Directorate on the following Industry Associations. Meetings are held at least quarterly in the most cases:

Fertilizer Society of South Africa (FSSA)

Organic Fertilizer Association of South Africa (OFASA)

Animal Feed Manufacturers' Association (AFMA)

Pet Food Institute of Southern Africa (PFI)

Crop Protection and Animal Feed Association (AVCASA)

There are several subgroupings of interest groups, that also meet separately on a regular basis:

Crop Protection group, Veterinary group, Safety and Environment group (SHE),

Working group for small-scale farmers and the (affiliated) Aerial Applications Association of South Africa.

A special focus is on training related to the Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No. 36 of 1947).

South African Pest Control Association (SAPCA)

Pest control officers with the necessary training are registered by the Department in no fewer than six different specialized fields relating to the application of agricultural remedies. Modular courses, approved by the Registrar, are given by Technicons (SETA, SAQA requirements).

Renderers' Association of South Africa

(Registration of Sterilization Plants in association with AFMA)

- Organized Agriculture
 - Grain SA
 - Agri SA

2.3.5 Public entities reporting to the Minister responsible for Agriculture

South African Abattoir Corporation (Abakor)

Abakor was established as a public company in terms of the South African Abattoir Corporation Act of 1992 to provide slaughtering and services and to market offal. Having operated in a protected environment, Abakor's financial viability was drastically affected by the commercialization and deregulation of the meat industry. The company was liquidated on 30 October 2000.

National Agricultural Marketing Council

The Marketing of Agricultural Products Act, 1996 (Act No. 47 of 1996) established the National Agricultural Council in January 1997 to, among other things, advise the Minister on the marketing of agricultural products. It facilitated the abolition of all agricultural marketing boards.

Agricultural Research Council

The Agricultural Research Council, as discussed under 2.3.1 above, was established by the Agricultural Research Act, 1990 (Act No. 86 of 1990) to provide agricultural development, technology and support to the agricultural community. The Council competes for supplementary research funding from the Innovation Fund on the Arts, Culture, Science and Technology Vote.

Land Bank

The Land Bank is an agricultural development bank that provides financial services to a diverse range of clients. Clients of the Bank include rural entrepreneurs who have traditionally been denied access to credit. Clients have access to the Bank's long term loans to purchase land, as long as they meet repayment and loan security criteria. Historically disadvantaged people have access to the Land Bank's Special Mortgage Bond.

As a special financier guided by a new mandate, which requires it to promote rural development, the Land Bank focuses on:

- Providing finance to all sectors of the agricultural economy
- Meeting the needs of resource-poor farmers and the rural poor
- Contributing to rural development aimed at promoting stability in the rural areas
- Matching financial sector norms for cost-efficiency, effectiveness and customer service

Onderstepoort Biological Products

Onderstepoort Biological products Ltd became a state-owned public company on 6 September 2000. It produces and markets a variety of animal vaccines and related biological products in local and international markets.

Ncera Farms (Pty) Ltd

Ncera Farms (Pty) Ltd is a public company with the Department as the sole shareholder. The project is managed to establish small and beginner farmers.

2.3.6 Summary

From the above it is clear that the NDA does not work in isolation in carrying out its mandate, including its environmental obligations. It has established vital linkages which range across the full spectrum of organizations and groupings: international, national, provincial and local government, research and academic institutions, manufacturers, industries, organized agriculture, communities and the public. As such it is well positioned.

2.4 Compliance with Environmental Legislative Provisions

The NDA is subject to governance by civil society through an elected legislature. It is therefore subject to all legislature passed by government as well as any norms and standards provided by civil society in ensuring environmental integrity.

The National Department of Agriculture, together with various other national departments, is responsible for the enforcement of the following legislation to ensure the orderly conduct of agricultural and related industries:

- * Abattoir Hygiene Act, 1992 (Act No. 121 of 1992). Directorate Veterinary Services (NDA).
- Agricultural Credit Act, 1966 (Act No. 28 of 1966). Directorate Debt Management (NDA).
- Agricultural Development Fund Act, 1993 (Act No. 175 of 1993). Directorate Financial and Provisioning Administration (NDA).
- Agricultural Laws Rationalisation Act, 1998 (Act No. 72 of 1998).
- * Agricultural Pests Act, 1983 (Act No. 36 of 1983). Directorate Plant Health and Quality (NDA); and Directorate Agricultural Land Resource Management (NDA).
- Agricultural Produce Agents' Act, 1992 (Act No. 12 of 1992). Agricultural Produce Agents' Council.
- * Agricultural Product Standards Act, 1990 (Act No. 119 of 1990). Directorate Plant Health and Quality (NDA).
- Agricultural Research Act, 1990 (Act No. 86 of 1990). Agricultural Research Council (ARC).
- Agricultural Law Extension Act, 1996 (Act No. 87 of 1996).
- * Animal Diseases Act, 1984 (Act No. 35 of 1984). Directorate Veterinary Services (NDA).
- * Animal Improvement Act, 1998. (Act No. 62 of 1998). Directorate Genetic Resources (NDA)
- * Animals Protection Act, 1962 (Act No. 71 of 1962). Directorate Genetic Resources (NDA).
- * Conservation of Agricultural Resources Act, 1983. (Act No. 43 of 1983). Directorate Agricultural Land Resource Management (NDA); and Directorate Agricultural Water Use Management (NDA).
- Co-operatives Act, 1981 (Act No. 91 of 1981). Directorate Business and Institutional Development (NDA).
- Designated Areas Development Act, 1979. (Act No. 87 of 1979). Directorate Debt Management (NDA).
- * Fencing Act, 1963 (Act No. 31 of 1963). Directorate Agricultural Land Resource Management. (NDA).
- * Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No. 36 of 1947). Directorate Agricultural Production Inputs (NDA).

- * Genetically Modified Organisms Act, 1997 (Act No. 15 of 1997). Directorate Genetic Resources (NDA).
- Groot Constantia Trust Act, 1993 (Act No. 58 of 1993). Groot Constantia Control Board.
- Land Bank Act, 1944 (Act No. 13 of 1944). Land Bank.
- * Liquor Products Act, 1989. (Act No. 60 of 1989). Directorate Plant Health and Quality (NDA).
- * Livestock Brands Act, 1962 (Act No. 87 of 1962). Registrar of Brands, (NDA) and Directorate Genetic Resources (NDA).
- * Livestock Improvement Act, 1977 (Act No. 25 of 1977). Registrar of Livestock Improvement and Directorate Genetic Resources (NDA).
- Marketing of Agricultural Products Act, 1996 (Act No. 47 of 1996). National Agricultural Marketing Council (NAMC).
- * Meat Safety Act, 2000 (Act No 40 of 2000). Directorate Veterinary Services (NDA and PDA's).
- * Onderstepoort Biological Products Incorporation Act, 1999. (Act No. 19 of 1999). Directorate Onderstepoort Biological Products (NDA).
- * Performing Animals Protection Act, 1935 (Act No. 24 of 1935). Directorate Veterinary Services and Directorate Genetic Resources (NDA).
- Perishable Products Export Control Act, 1983 (Act No. 9 of 1983). Perishable Products Export Control Board (PPECB).
- * Plant Breeders' Rights Act, 1976 (Act No. 15 of 1976). Directorate Genetic Resources (NDA).
- * Plant Improvement Act, 1976 (Act No. 53 of 1976). Directorate Genetic Resources (NDA).
- Societies for the Prevention of Cruelty to Animals Act, 1993 (Act No. 169 of 1993). SPCA National Council of Southern Africa.
- South African Abattoir Corporation Act, 1992. (Act No. 120 of 1992). Abakor Ltd.
- * Subdivision of Agricultural Land Act, 1970 (Act No. 10 of 1970). Directorate Agricultural Land Resource Management (NDA).
- * Subdivision of Agricultural Land Act Repeal Act, 1998 (Act No. 64 of 1998).
- * Veterinary and Para-Veterinary Professions Act, 1982 (Act No. 19 of 1982) South African Veterinary Council.

Those marked with an asterisk are considered to have environmental implications, and are discussed further in Table 1.

Other national legislation with environmental implications in which the NDA is involved, though not responsible for, is given in Table 2, whereas other formalized actions with environmental implications are given in Table 3.

A summary table of important authorizations/permits that are required for different activities that could impact on the environment is given in Table 4.

Table 1. National Legislation with Environmental Implications Administered by the NDA

Legislation	Implementing Directorate	Management and Procedures for Compliance
Abattoir Hygiene Act, 1992 (Act No. 121 of 1992)	Directorate Veterinary Services (NDA)	Promote meat safety, establishing and maintain national essential standards in respect of abattoirs and export control/regulate. Regulate the importation and exportation of meat (based on international standards).
Superseded by Meat Safety Act, 2000 (Act No. 40 of 2000)	Provincial Veterinary Services	Delivery of services e.g. approval of slaughter facility – registration certificate in accordance with E.N.S. prescribed by regulations R3505 of 9 October 1969. Implementation of provisions for domestic matters lies with Veterinary Services of the PDAs
Agricultural Pests Act, 1983 (Act No. 36 of 1983)	Directorate Plant Health and Quality (NDA)	Provides for measures to prevent the introduction and establishment of pests which include <i>inter alia</i> : <ul style="list-style-type: none"> • Authorisation of the import of controlled goods which include <i>inter alia</i> plants, plant products, pests, exotic animals and honey. • Conditions that the imported controlled goods shall comply with. • Procedures to be followed with import of controlled goods to ensure that exotic pests and diseases are not imported and established in South Africa. <p>This act further provides for the means of the importation, control and release of <i>inter alia</i>:</p> <ul style="list-style-type: none"> • Plant propagating material of agricultural, horticultural, ornamental and forestry crops to provide in the needs of the community. • Food for humans and animals including fresh fruits and vegetables, grains and oil seeds. • Fibres and timber • Other plant products and animal feeds <p>It is generally accepted that the importation and release of the above mentioned controlled goods does not pose any threat to the environment and these goods have been imported for many years.</p>

Legislation	Implementing Directorate	Management and Procedures for Compliance
		<p>The above mentioned activities are based on the available international standards and guidelines as incorporated in the WTO-SPS Agreement and the IPPC revised convention text and adopted international standards.</p> <p>Management systems and procedures include:</p> <ul style="list-style-type: none"> • Executive officer delegate his or her powers to officials regarding powers to authorize imports, set requirements, detain, evaluate, decontaminate and release of imported controlled goods. • International standards and guidelines regarding Pest Risk Analysis to determine and manage phytosanitary risk involved. Currently a local PRA model had been developed and is at present been evaluated. • Liaison committees which include NIDS OBCO and IMCO committees operational at all relevant ports of entry. • Liaison with other interested role players. <p>In other cases imports of controlled goods have an impact on the environment and these include <i>inter alia</i> bio-control agents, organisms for research purposes, bio-pesticides and bio-fertilisers, exotic plants, weeds as well as plant species listed on CITES lists for endangered species. Management systems include the above mentioned as well as:</p> <ul style="list-style-type: none"> • National protocol for the importation of bio-control agents and organisms for research purposes. • Relevant international standards for the importation and release of bio-control agents. • Active consultative work committees for bio-control agents and exotic organisms. • PRA model that includes the assessment of the invasive and weed potential of exotic plants to be imported. <p>Export of plants and plant products is executed in terms of the relevant international standards and guidelines. This is currently not prescribed by national legislation but in accordance with IPPC principles.</p>

Legislation	Implementing Directorate	Management and Procedures for Compliance
Agricultural Pests Act, 1983 (continued)	<p data-bbox="613 163 947 228">Directorate Plant Health and Quality (NDA)</p> <p data-bbox="613 359 972 424">Directorate Agricultural Land Resource Management (NDA)</p>	<p data-bbox="1039 163 1962 326">It is envisaged that the current legislation will be revised to provide for this need. In the cases where indigenous flora is exported from the environment, the DPHQ liaises with DEAT and the relevant NCD to ensure compliance with environmental legislation and policies before issuance of official phytosanitary certificates.</p> <p data-bbox="1039 359 1962 424">The Act further provides for the control of Red-billed Quelea, Blackfly and Locusts:</p> <p data-bbox="1039 458 1962 719">Control of Red-billed Quelea: The procedures and strategies are prescribed in the Policy for Managing the Red-billed Quelea problem (Ref 10/5/42 of 1994). The functioning procedures, measures and methods are described in the Red-billed Quelea Control Manual, 1999. Steps to prevent the chemical control agents used from having a detrimental effect on farming activities are taken. Provision is also made for the disposal of dead quelea in such a manner that they will not endanger man or any other non-target animal or bird, or have any detrimental effect on the environment.</p> <p data-bbox="1039 752 1962 1014">Control of Blackfly : Proposed Policy Document Recommendations for use of appropriate larvicides. Treatment to be based on sound scientific data, be environmentally acceptable and should not affect biodiversity in or around affected rivers. Management should consider international obligations. A research committee of the advisory body to determine areas of treated rivers to be left as refugio, for recolonisation by nonpest blackflies and sensitive nontarget organisms. Bioassays of treated rivers to be conducted regularly.</p> <p data-bbox="1039 1047 1962 1248">Control of Locusts: A Policy for the Management of the Locust problem in South Africa is in place. This sets guidelines for the effective and environmentally friendly management of the problem and addresses the current lack of suitable environmentally acceptable locust control measures. Locusts can have a devastating effect on crops, pastures and the environment, especially if not controlled timeously and effectively.</p>

Legislation	Implementing Directorate	Management and Procedures for Compliance
<p>Agricultural Product Standards Act, 1990 (Act No. 119 of 1990)</p>	<p>Directorate Plant Health and Quality (NDA)</p>	<p>This Act provides <i>inter alia</i> for prescription of a distinctive mark for use in connection with the sale of a product, or the export of a product or a particular class or grade of such products so as to certify the correctness of an indication of class or grade (as in the case of the Wine of Origin Scheme) on in the case of organically produced products, the production method concerned.</p> <p>Guidelines for Certification of Organic Production Process have been drafted and made available for comment to ensure compliance with organic procedures.</p> <p>Auditing of certification would ensure that correct organic norms and standards are being adhered to.</p> <p>Concerns of organic protagonists would be met and potential pollution through the use of undesirable organic and inorganic substances minimized.</p>
<p>Animal Diseases Act, 1984 (Act No. 35 of 1984)</p>	<p>Directorate Veterinary Services (NDA)</p> <p>Provincial Veterinary Services</p>	<p>The Acts provides for:</p> <ul style="list-style-type: none"> - Promoting animal health in the national herds - Control of animal disease outbreaks - Regulating the importation and exportation of animal and animal products - Establishing animal health schemes (disease eradication programmes) <p>Norms and standards on disease control are based on international guidelines, standards and agreements.</p> <p>Facilitate the development of a national animal disease surveillance system.</p> <p>International liaison.</p> <p>Measures are prescribed by Regulation R2026 of 26 September 1986. Internally the Veterinary Services of the PDA's are responsible for implementation</p>

Legislation	Implementing Directorate	Management and Procedures for Compliance
<p>Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)</p>	<p>Directorate Agricultural Land Resource Management (NDA)</p> <p>PDA's</p>	<p>Provides for control over the utilization of the natural agricultural resources of South Africa in order to promote the conservation of the soil, the water sources and the vegetation and the combating of weeds and invader plants; and for matters connected therewith.</p> <p>This entails providing for the conservation of the natural agricultural resources by the maintenance of the production potential of land, by the combating and prevention of erosion and weakening or destruction of the water sources, and by the protection of the vegetation and the combating of weeds and invader plants.</p> <p>In order to promote natural agricultural resource conservation, policies, norms, standards and guidelines have been developed, as has a national agricultural resource audit and a conservation GIS. The act generally applies to all 'agricultural' land in the Republic except for the section dealing with weeds that applies to urban areas as well.</p> <p>It stipulates specific requirements and prohibitions applicable to land users that are detailed in Control Measures published in Government Notice No 9238 of 25 May 1984. Certain activities are subject to prior approval (e.g. cultivation of virgin land and burning of veld while others are prescribed as 'best practice' in the interest of sustainable land use.</p> <p>Aspects related to water, including erosion, prevention of waterlogging and salination of irrigated land, utilization and protection of vleis, marshes, water sponges and water courses and the flow pattern of run-off water are also dealt with.</p>

Legislation	Implementing Directorate	Management and Procedures for Compliance
<p>Fencing Act, 1963 (Act No. 31 of 1963)</p> <p>Fertilizers, Farms Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No. 36 of 1947)</p>		<p>The act further provides for the implementation of schemes, of which two are still functioning viz the Weed Control Scheme administered by D:LRM and the Soil Conservation Scheme administered by the PDAs.</p> <p>Conservation Committees are appointed under Section 15 and are administered by the PDAs.</p> <p>The Inspection Service does compliance monitoring on farm level. The directorate has a presence in each of the provinces of the Republic and a total staff component of 55 field staff.</p>
	Directorate Agricultural Water Use Management (NDA)	Policies, norms, standards and guidelines have been developed for agricultural water system development, for engineering aspects of soil conservation and for the design, construction and maintenance of key soil conservation works.
	Directorate Agricultural Land Resource Management (NDA)	The act specifies fencing standards and regulates the relationship between neighbours regarding construction and maintenance of fencing. Inputs are largely limited to the handling of enquiries, however. The environmental impact of fencing is indirect, largely relating to animal movement.
	Directorate Agricultural Production Inputs (NDA)	<p>To provide for the appointment of a Registrar of Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies; for the registration of fertilizers, farm feeds, agricultural remedies, stock remedies, sterilizing plants and pest control operators; to regulate or prohibit the importation, sale, acquisition, disposal or use of fertilizers, farm feeds, agricultural remedies and stock remedies; to provide for the designation of technical advisers and analysts; and to provide for matters incidental thereto.</p> <p>The following definitions apply: "fertilizer" means any substance which is intended or offered to be used for improving or maintaining the growth of plants or the productivity of the soil;</p>

Legislation	Implementing Directorate	Management and Procedures for Compliance
Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No. 36 of 1947)	Directorate Agricultural Production Inputs (NDA)	<p>“farm feed” means –</p> <p>(a) (i) any substance obtained by a process of crushing, gristing or grinding, or by the addition to any substance or the removal thereof from of any ingredient; or</p> <p>(ii) any condimental food, vitamin or mineral substance or other substance which possesses or is alleged to possess nutritive properties; or</p> <p>(iii) any bone product, intended or sold for the feeding of domestic animals or livestock;</p> <p>or</p> <p>(b) any stock lick or substance which can be and is used as a stock lick, whether or not such stock lick or substance possesses medicinal properties,</p> <p>but does not include straw, chaff, unground hay, silage, any cereal in the grain or any substance which would otherwise be a farm feed but has been ground, crushed, gristed or prepared for any person, in accordance with his directions for his own use, unless the Minister has by notice in the Gazette declared such substance a farm feed for the purposes of this Act;</p> <p>“agricultural remedy” means any chemical substance or biological remedy, or any mixture or combination of any substance or remedy intended or offered to be used –</p> <p>(a) for the destruction, control, repelling, attraction or prevention of any undesired microbe, alga, nematode, fungus, insect, plant, vertebrate, invertebrate, or any product thereof, but excluding any chemical substance, biological remedy or other remedy in so far as it is controlled under the Medicines and Related Substances Control Act, 1965 (Act No. 101 of 1965), or the Hazardous Substances Act, 1973 (Act No. 15 of 1973); or</p> <p>(b) as plantgrowth regulator, defoliant, desiccant or legume inoculant, and anything else which the Minister has by notice in the Gazette declared an agricultural remedy for the purposes of this Act;</p>

Legislation	Implementing Directorate	Management and Procedures for Compliance
<p>Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No. 36 of 1947)</p>	<p>Agricultural Production Inputs (NDA)</p>	<p>“stock remedy” means a substance intended or offered to be used in connection with domestic animals, livestock, poultry, fish or wild animals (including wild birds), for the diagnosis, prevention, treatment or cure of any disease, infection or other unhealthy condition, or for the maintenance or improvement of health, growth, production or working capacity, but excluding any substance in so far as it is controlled under the Medicines and Related Substances Control Act, 1965 (Act No. 101 of 1965);</p> <p>“sterilizing plant” means a plant used for sterilizing of bones or other substances derived from cattle, members of the horse family, sheep, goats, pigs, poultry or ostriches, of any age, or from any vertebrate or invertebrate specified by the Minister from time to time by notice in the Gazette.</p> <p>“pest control operator” means a person who as, or in the course of, his trade or occupation administers agricultural remedies for the purposes for which they are intended;</p> <p>Registration of the above is required in terms of the Act. Applications for registration must be made in the prescribed manner, accompanied by the prescribed application fee. Stringent technical requirements have to be met. If, after consideration of any such application and after such investigation and enquiry as he may deem necessary, the registrar is satisfied that –</p> <p>(a) the fertilizer, farm feed, agricultural remedy or stock remedy in respect of which registration is applied for is suitable and sufficiently effective for the purposes for which it is intended, and complies with such requirements as may be prescribed, and that it is not contrary to the public interest that it be registered, and that the establishment where it is manufactured is suitable for such manufacture, he shall register such fertilizer, farm feed, agricultural remedy or stock remedy;</p> <p>(b) the sterilizing plant in respect of which registration is applied for is suitable and sufficiently effective for the purpose for which it is intended, and complies with such requirements as may be prescribed, and that it is not contrary to the public interest that such sterilizing plant be registered, he shall register such sterilizing plant;</p>

Legislation	Implementing Directorate	Management and Procedures for Compliance
Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No. 36 of 1947)	Directorate Agricultural Production Inputs (NDA)	<p>(c) the pest control operator in respect of whom registration is applied for has the prescribed qualifications or is otherwise, to such extent as may be determined by the registrar, skilled in the use of agricultural remedies, and that it is not contrary to the public interest that such pest control operator be registered, he shall register such pest control operator:</p> <p>From the above, it is clear that there are a number of potentially detrimental activities requiring control to protect the environment. These include aspects as wide-ranging as obsolete stocks of redundant pesticides and empty pesticide containers, the use of a multitude of chemical products and sewage sludge in agriculture. As regards the latter, strict requirements relating to metal content and absence of certain pathogens have to be met for land application</p> <p>In order to ensure compliance under the Act, Regulations are used, that are gazetted from time to time. Amended regulations relating to fertilizers, farm feeds, agricultural remedies, stock remedies, sterilizing plants and pest control operators were published in 1983. These are updated as and when necessary, in consultation with the relevant industry associations. Guidelines are also issued where necessary, as in the latest case for the registration of pet foods. There is considerable co-operation with industry in ensuring compliance and environmental integrity. The inspection division, with five regional offices and a staff of 18, further ensures compliance.</p>
Genetically Modified Organisms Act, 1997 (Act No. 15 of 1997)	Directorate Genetic Resources (NDA)	Provides measures to promote the responsible development, production, use and application of genetically modified organisms (GMOs). Implemented on 1 December 1999, it governs all activities related to GMOs to ensure that these activities do not have any harmful effects on the environment, or on human and animal health.

Legislation	Implementing Directorate	Management and Procedures for Compliance
Genetically Modified Organisms Act, 1997 (Act No. 15 of 1997)	Directorate Genetic Resources (NDA)	<p>Releasing GMOs into the environment can have an impact on the environment with regard to biodiversity. To ensure that harm is minimized, a complete scientific assessment of all applications for activities with GMOs is conducted. Applications are submitted to the Registrar (the Director: Genetic Resources), which are in turn assessed and reviewed by the Advisory Committee (AC). The AC then submits the application with its recommendations to the Executive Council, chaired by the Programme Manager: sustainable Resource Use and Management. Only after approval of an application will a permit authorizing the proposed activity be issued. This permit will prescribe certain conditions to ensure the necessary containment required during the trial.</p> <p>In order to monitor whether the permit holder adheres to the provisions of the Act and the conditions of a permit, each trial site is visited by an inspector of the Directorate at least 3 to 4 times. These inspections occur during the duration of the trial as well as a few months after the destruction of the trial. Report of such inspections are documented and filed.</p>
Liquor Products Act, 1989 (Act No. 60 of 1989)	Directorate Plant Health and Quality (NDA)	<p>This Act provides for administration of the Wine of Origin Scheme as well as for the Integrated Production of Wine Scheme. The latter endeavours to reduce pollution in the environment and protect natural resources by judicious use of agricultural chemicals and produce fruit profitably in an environmentally friendly manner. These schemes are formed by the Wine and Spirit Board, as appointed by the Minister of Agriculture.</p>
Livestock Brands Act, 1962 (Act No. 87 of 1962)	Directorate Genetic Resources (NDA)	<p>The act provides for an identification system for stock owners. It can be used for traceability, stock theft and the monitoring of animal diseases, with an indirect link to environmental issues.</p>
Livestock Improvement Act, 1977 (Act No. 25 of 1977)	Directorate Genetic Resources (NDA) (with Registrar of Livestock Improvement)	<p>Any new breeds of farm animals are subject to a biological impact evaluation prior to recognition and import. This includes a literature study as well as an assessment of the possible impact in local breeds. This is currently implemented under "any other conditions as required by the registrar". The importer has to arrange the literature study and has to arrange a suitable institute to do the evaluation. This can include a limited import of genetic material.</p>

Legislation	Implementing Directorate	Management and Procedures for Compliance
Livestock Improvement Act, 1977 (Act No. 25 of 1977)	Directorate Genetic Resources (NDA) (with Registrar of Livestock Improvement)	<p>Examples:</p> <ul style="list-style-type: none"> • Evaluation of the Belgian Blue cattle breed as a sire line for terminal crossbreeding – 1 000 doses of semen have been imported to do on farm trials • Evaluation of the Beefalo breed – semen imported to do on-farm trials • Evaluation of the Marchigiana breed – semen and embryos imported for evaluation • Evaluation of the Japanese Wagyu – semen and embryos imported for use • Angus cattle – evaluation of improvement in marbling in the beef. • Evaluation of the east Friesian sheep breed – limited semen import for evaluation • Evaluation of the Alpaca for fiber production in the Western Cape – limited import of 50 Alpacas <p>This serves to ensure that only beneficial effects are experienced. Environmental impacts are largely indirect. This Act will be superseded by Act No. 62 of 1998.</p>
Animal Improvement Act, 1998 (Act No. 62 of 1998)	Directorate Genetic Resources (NDA)	<p>This new Act, which could be applied from February 2001, is more specific in that there may be no new imports of genetic material before a prescribed biological impact study has been conducted.</p> <p>There is strict application regarding the introduction of new breeds, with specific, prescribed procedures. In an effort to ensure effective implementation and compliance, it is envisaged that the Provincial Departments of Agriculture (PDA's) will be more involved with certain aspects in future.</p>
Plant Breeders' Rights Act, 1976 (Act No. 15 of 1976)	Directorate Genetic Resources (NDA)	<p>This Act is voluntary. Any variety for which a Plant Breeders' Right is sought must comply with the provisions of the Plant Improvement Act (Act No. 53 of 1976). The variety must also be "new", i.e. newly developed or bred. Currently there are some 1 500 varieties in South Africa that have valid registered Plant Breeders' Rights. The local industry is small compared to overseas, and less than half of the registered varieties originated in South Africa. For the export market it is important to have access to the "right or correct" varieties for international acceptance. Cultivation methods need to conform to sustainability and environmentally acceptable methods, to minimize any possibly detrimental effects, though this is not covered <i>per se</i> in the Act.</p>

Legislation	Implementing Directorate	Management and Procedures for Compliance
Plant Improvement Act, 1976 (Act No. 53 of 1976)	Directorate Genetic Resources (NDA)	<p>The aim of this Act is to ensure the availability of high quality propagating material to all users. Propagating material of all plants declared in terms of this Act must comply with certain minimum conditions. All sellers of seed must be registered as such. As all our main agricultural crops have been declared in terms of the Act, it ensures that all propagating material, is of high standard. The Plant Improvement Act is compulsory and before seed of any variety may be sold, it must be registered in terms of the Act. This means that a quantity of seed, together with the necessary documentation, must be submitted to the Division of Variety Control which compares the new variety with all other varieties of the same kind of plant. The variety must pass the so-called “DUS” (Distinguishability, Uniformity and Stability) test, which means that the variety must be clearly distinguishable from all other varieties of the same kind of plant, it must be uniform (all plants must look the same (depending on the variations within the kind of plant of course) and it must be stable (it must remain the same after repeated propagation). To further ensure that propagating material complies with the minimum requirements of the Act, inspectors of the Directorate carry out routine inspections at all registered sellers.</p> <p>Certification schemes, currently administered by the South African National Seed Organization (SANSOR), ensure the highest quality of seed available. Inspections and examinations are carried out to ensure that propagating material sold in terms of the Act complies with laid down rules and standards and is of good quality.</p>

Legislation	Implementation Directorate	Management and Procedures for Compliance
Subdivision of Agricultural Land Act, 1970 (Act No. 70 of 1970)	Directorate Agricultural Land and Resource Management (NDA)	This Act is mainly involved with Provincial Planning Laws when addressing the change of land use, which has a direct impact on the environment. Proclamation No. R100 of 1995 retained and effectively defined the agricultural land to which the act is applicable. This Proclamation was necessary to clarify the controversial issue of whose responsibility the subdivision of agricultural land is, because there are 17 Acts and Provincial Ordinances dealing directly or indirectly with Land-use Planning, entailing agricultural land. Straightforward applications to subdivide existing farms is mainly the sole responsibility of the Act and, as such, could be a contributing factor to misuse of agricultural land, leading to land degradation and/or pollution of the environment.
Subdivision of Agricultural Land Repeal Act, 1998 (Act No. 64 of 1998)	Directorate Agricultural Land and Resource Management (NDA)	This Act has not yet been promulgated. It is envisaged that it will obviate problems in the interim transition of land reform, and is discussed under 3.3

Table 2. Other National Legislation with Environmental Implications in which the NDA is involved

Legislation	Involved Directorate	Management and Procedures for Compliance
Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)	Directorate Agricultural Production Inputs, NDA with Department of Labour (DOL)	Product labels on agricultural and stock remedies as approved. Abbreviated material safety data sheets (MSDS), indicating operating and environmental implications. The use of protective clothing for certain products ensures safety. Disposal of containers handled.
Skills Development Act, 1998 (Act No. 97 of 1998)	Directorate Agricultural Production Inputs, NDA with Department of Labour (DOL)	Production of training manuals in co-operation with AVCASA for safe handling and usage of agricultural and stock remedies.
Hazardous Substances Act, 1973 (Act No. 15 of 1973) Hazardous Substances Act, 1973 (Act No. 15 of 1973)	Directorate Agricultural Production Inputs, NDA with Department of Health (DOH)	Keeping of poison registers
Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act No. 54 of 1972)	Directorate Agricultural Production Inputs, NDA with Department of Health (DOH)	Implications of residues on products. Human health and exports.
National Parks Act, 1976 (Act No. 57 of 1976)	Directorate Agricultural Land Resource Management (NDA)	Matters relating to the control of Red-billed Quelea, Blackfly and Locusts
Constitution of South Africa (Act No. 108 of 1996) Sections 24 & 25	Directorate Farmer Settlement and Development (NDA) with Department of Land Affairs (DLA)	Mandates an increase in access to land on an equitable basis to the citizens of the country, as well as an increase in the security of tenure. Furthermore the process of equitable redistribution of land should not compromise the importance of the environment
Provision of Land and Assistance Act, 1993 (Act No. 126 of 1993)	Department of Land Affairs with Directorate Farmer Settlement and Development (NDA)	Authorises the exemption of projects from complying with the laws dealing with the subdivision of land and township development. It is envisaged that this authority will be delegated by the Minister of Land Affairs to the Provincial Directors of Land Affairs. Involvement in DLA-DANCED project regarding environmental implications.
Restitution of Land Rights Act, 1994 (Act No. 22 of 1994)	Department of Land Affairs with Directorate Farmer Settlement and Development (NDA)	DLA-DANCED project to address environmental implications

Table 3. Other Actions with Environmental Implications

Action	Implementing Directorate	Management and Procedures for Compliance
National Plant Protection Organization	Directorate Plant Health and Quality (NDA)	<p>In accordance with South Africa's international obligations, South Africa must provide for an official National Plant Protection Organisation. Within South Africa the responsible department is the NDA and within the NDA the responsible Directorate is Plant Health and Quality.</p> <p>The responsibilities include:</p> <ul style="list-style-type: none"> • Issuance of certificates relating to the phytosanitary requirements of the importing country. • Surveillance of growing plants, including areas under cultivation and wild flora, and plant and plant products in storage or transportation with the objective to report outbreak and spread of pests and controlling thereof. • Inspection of consignments of controlled goods with the objective to prevent introduction and spread of pests. • Disinfestation or disinfection of consignments of controlled goods moving in the international traffic. • Protection of endangered areas and designation of maintenance and surveillance of pest free areas and areas of low pest prevalence. • Conduct pest risk analysis. • Ensure phytosanitary security of consignments after certification regarding composition, substitution and reinfection is maintained before export. • Training and development of staff. • The Directorate is the implementing directorate for different Certification Schemes namely: <ul style="list-style-type: none"> - South African Seed Potato Scheme administered by the Independent Certification Council for Seed Potato - South African Seed Certification Scheme administered by South African National Seed Organisation (SANSOR) - Deciduous Fruit Plant Certification Scheme administered by the Executive Board of the Deciduous Fruit Plant Improvement Association - South African Plant Certification Scheme for Wine Grapes administered by the Executive Board of the Vine Improvement Association

		<p>The Directorate is represented in the bodies that administer these Schemes. The schemes are responsible for certification of plants and Propagating material of the kinds of plants referred to in the schemes, with the objective of maintaining the quality of plants and propagating material of such kinds and ensuring the usefulness for agriculture and industrial purposes of the products derived from them.</p> <p>The directorate is responsible for monitoring (through audits) the activities of the schemes, for compliance with the Acts.</p> <p>The Directorate's National Plant Genetic Resources Center (NPGRC) at the Roodeplaat experimental farm, makes use of the services of the Agricultural Research Council for the multiplication, regeneration and characterization of germplasm as the Agricultural Research Council has a number of Institutes that specialize in research/breeding of specific crop species and are also involved in the same activities as the NPGRC</p>
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Table 4. Summary Table of Important Authorizations/Permits Required

Permits/Authorizations required for:	Application Legislations	Procedures in Place	International Requirements
Import and Export of Meat and Meat Products	Meat Safety Act, 2000 (Act No. 40 of 2000)	Regulations	Codex Alimentarius FAO/WHO WTO-SPS agreement
Slaughter facilities			
Import of material carrying risk of introducing pests into South Africa (Phyto-sanitary certificates)	Agricultural Pests Act, 1983 (Act No. 36 of 1983)	National Protocol. Strict customs control.	WTO-SPS agreement NIDS, OBCO and IMCO committies CITES IPPC
Distinctive marks (as in case of Wine of Origin Scheme)	Agricultural Product Standards Act, 1990 (Act No. 119 of 1990)	Regulations	
Organically produced products		Draft regulations	EU Scheme
Permits under certain circumstances to curtail spread of diseases	Animal Diseases Act, 1984 (Act No. 35 of 1984)	Development of National Animal Disease Surveillance System Regulation R2026 of 26 September 1986	OIE Codex Alimentarius FAO/WHO WTO-SPS-agreements
Cultivation of virgin land (EIA-DEAT requirements)	Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)	Control Measures (Government Notice No. 9238 of 25 May 1984)	Agenda 21 UNFCCC
Burning of veld			
Fertilizers, farm feeds, agricultural remedies, stock remedies and sterilizing plants	Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No. 36 of 1947)	Regulations, stringent technical requirements. Recommendations of technical advisors	FAO/WHO – POPs programme CODEX Alimentarius on pesticide residues

Permits/Authorizations required for:	Application Legislations	Procedures in Place	International Requirements
Genetically modified organisms (GMOs) activities	Genetically Modified Organisms Act, 1997 (Act No. 15 of 1997)	Complete scientific assessment prior to commencement. Stringent conditions applied. Visited by inspectors. Interdepartmental Committee.	CBD FAO
Import of genetic material	Animal Improvement Act, 1998 (Act No. 62 of 1998)	Biological impact study before introduction of new material	FAO UPOV CBD WTO-TRIPS WTO-SPS

2.5 Responsibility and capacity for implementation

2.5.1 Introduction

It is clear that virtually all directorates have capacity limitations when it comes to carrying out their mandates. This will need to be addressed in order to ensure efficient delivery. Specific aspects are discussed under the different directorates.

2.5.2 Directorate Farmer Development and Support

This is a relatively new directorate that is tasked with the extremely important function of ensuring the development and support of new entrants to agriculture. At least five of their scientists have attended training offered under the DLA-DANCED project which includes the process of incorporation of environmental concerns into land reform.

2.5.3 Directorate Business and Institutional Development

As regards environmental matters, this directorate is responsible for building a national disaster management system to ensure that agricultural enterprises will recover, grow and develop after natural disasters.

A further responsibility is instituting a special programme for food security for poor rural and peri-urban producers who cannot participate in the mainstream commercial environment.

2.5.4 Directorate Agricultural Land Resource Management

The staff complements for conservation promotion, agricultural resource audit and the conservation GIS are relatively small, with five persons for each. Inspection Services has about sixty resource conservation inspectors, reclamation and rehabilitation over a hundred and thirty general staff and migratory pest control eighteen.

2.5.5 Directorate Agricultural Water Use Management

The promotion of water and soil conservation and utilization has a staff component of sixteen, while over two hundred personnel are involved in the establishment and maintenance of key soil conservation works and a further 200 in drilling services to provide stock water.

There is a severe shortage of both technicians and engineers.

2.5.6 Directorate Genetic Resources

Genetic Resources, apart from their scientific and technical staff, has fifteen to twenty plant inspectors, that operate on a decentralized basis in implementing the Plant Improvement Act (No. 53 of 1976) and Genetically Modified Organisms Act (No. 15 of 1997). For implementing the Livestock Improvement Act (Act No. 25 of 1977), which is to be replaced by the Animal Improvement Act (Act No. 62 of 1998) in 2001, there is

currently only one inspector. However, State Veterinarians from all the Provinces assist with the inspection and certification of semen and at embryo collection centers. In addition the SA Veterinary Semen and Embryo group assists in this regard.

2.5.7 Directorate Veterinary Services

Although the Directorate is responsible for the implementation of the various Acts, it is the Provincial Veterinary Services that actually carry out the work on the ground.

Qualified veterinarians are in extremely short supply and the remaining personnel are over extended.

2.5.8 Directorate Plant Health and Quality

There are inspection services on a national basis at all points of entry. Two centers of specialist support exist in Pretoria and Stellenbosch with regard to:

- Policy, Protocols and Standards
- Legislation
- PRA – authorizations advice
- Laboratory diagnostic services
- Post entry quarantine
- Awareness and plant health promotion
- International liaison and communication
- Co-ordination of national procedures
- Communication network
- Awareness and quality promotion

With the envisaged implementation of organic production standards, training of officials to handle organic production processes is essential.

2.5.9 Directorate Agricultural Production Inputs

There are full time advisors for stock and agricultural remedies, while consultants are used for fertilizer and pet and animal feed applications. There are eighteen inspectors to administer the Act, regionally distributed at five regional centres. Inspections of production facilities are carried out and samples of products taken, analysed and evaluated in terms of registration requirements. Prosecutions are instituted where necessary.

CHAPTER 3 : POLICIES, PLANS AND PROGRAMMES

3.1 Introduction

At National level MINMEC recently set the following priorities:

- Implementation of a farmer settlement programme
- Improving agricultural support services (research, technology, agricultural finance and marketing information)
- Facilitate infrastructure development (market, communication and production)
- Development of a framework to support food security
- Facilitate trade development and support
- Implementation of a human resource development programme
- Facilitate sustainable natural resources management and use

Furthermore, the Presidential Imperative Programme (PIPS) identified seven priority areas for attention, that were each assigned to specific Science Councils:

- Rural development
- Urban renewal
- Regional integration
- Job creation
- Crime prevention
- Human resource development
- HIV/AIDS

Although seldom mentioned specifically, it is implicit in all these priority areas that social, economical and environmental, sustainability is essential. These programmes need, in all respects, to conform to the principles of NEMA. The appropriate directorates of the NDA are responsible to make their contributions to achieving these goals.

Many of the policies relating to legislation with potential environmental implications were mentioned in Table 1 as part of compliance. It is characteristic of virtually all directorates that policies, regulations, guidelines and working documents are being constantly reviewed, updated and revised. This dynamic approach means that the needs of stakeholders are met, and that environmental concerns are adequately addressed. There are obvious differences between directorates, and the salient aspects regarding the environment are discussed where relevant for the different directorates.

In this section, the directorates are again treated individually. This approach was followed to orientate officials and have them identify with aspects related to their day to day activities which are carried out within their respective directorates.

In the summary tables given under 3.11, programmes have been grouped in a generic manner and compliance with, and implications of, clustered NEMA principles elucidated and discussed, thus giving a broader NDA perspective.

3.2 Directorate Farmer Settlement and Development

The following are receiving attention:

- Encourage environmentally sustainable development:
 - agricultural land should be zoned/subdivided according to its production suitability
 - ensure that land use activities conducted on the farm do not degrade the natural resource base and ecological systems beyond their ability to recover, and that human beings are protected from adverse impacts
 - correct surveying of stock numbers and see to it that correct numbers are complied with (correct carrying capacity)
- Promote integrated development planning
 - beneficiaries should link with other sectors in developing their environment (e.g. linkages with local government (municipality), district and provincial department of Environmental Affairs and Tourism and NGOs involved in environmental issues
 - beneficiaries and the municipality could participate in existing drought and flood support schemes.
- The land reform for agricultural development (LRAD) programme should fit into an integrated Land Development Objective (LDO)/Integrated Development Plan (IDP) process with the District level as the focal point of delivery.
- Encourage the involvement of community based natural resource management (CBNRM)
 - this involves the management of land and other natural resources such as grazing, vegetation, wildlife and water by groups of rural people through their local institutions.
- Beneficiary training on agricultural production and environmental management
 - compulsory training should be given to beneficiaries on how they can sustain and develop their environment.
- Protection of agricultural resources.

The protection of agricultural resources remains in the first instance with the farmer as custodian of the land for future generations. This can be successfully obtained through well-trained and well-informed farmers with access to financial assistance, where required. Protection of resources should be undertaken on a scientifically planned basis with monitoring and evaluation through appropriate legislation.

Because of the all-encompassing nature of land redistribution and future sustainability, all aspects of the NEMA principles are important and relevant : 2(2), 2(3) and 2(4).

3.3 Directorate Business and Institutional Development

The following areas relating to environmental issues are receiving attention:

- Development of guidelines relating to drought and flood management for the Disaster Management Centre.
- Piloting a Special Programme for Food Security, including integration from food gardens to emerging commercial production and incorporating the concepts of sustainability.

3.4 Directorate Agricultural Land Resource Management

The following activities are relevant:

- Updating of existing procedures to comply to ISO standards, including quality management and assurance, environmental management and environmental auditing.
- Sustainable utilization of the natural resources
Act No. 43 of 1983 is currently under revision under the title Sustainable Utilization of Agricultural Resources Bill, 1999.
- Combating of weeds and invader plants
Regulations pertaining to these are currently under revision and are due for promulgation in the near future. These amendments to legislation reflect a tougher approach to plant species that are harmful to human welfare, biodiversity and the environment in general. The new regulations are aimed at the longterm management and prevention of invasion and the "polluter pays principle" where inspectors and growers of invader plants will have to pay for the costs of control as well as water use.
- Red billed Quelea
The main policy prescribing the control of Red-billed Quelea is document no 10/5/42 of 1994. The whole approach is reviewed annually in a business plan that attempts to develop and maintain response systems and control manuals, develop and implement policies, legislation and control strategies. The establishment and use of consultative forums, technology transfer for effective control measures and research programmes to develop effective and environmentally friendly control measures receive ongoing attention. Of particular importance is the development and establishment of practical early warning systems.
- Blackfly
A proposed Blackfly policy document is currently being finalized, in consultation with a number of role players outside the NDA. A number of policy recommendations are made, as well as recommendations for appropriate research. It is emphasized that Blackfly control should be based on sound scientific data, be environmentally acceptable and not adversely affect biodiversity.

- **Locusts**

A policy document for locust control is in place. Effective control is of national importance, as is the maintenance of biological diversity. In controlling locusts the vulnerability and sensitivity of the environment must be taken into account. Areas that are especially sensitive to chemical control operations need to be identified, and effective, alternative control measures developed and utilized. Early warning systems are of importance, and co-operation within SADC essential.

The following NEMA norms and principles are relevant to the control of Red-billed Quelea, Blackfly and Locusts:

Section 2(2), 2(3), 2(4) (a) (i), (ii), (iv), (vi) (vii), (viii), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), (n), (o), (p), (r)

- **National Agricultural Land Resource Monitoring**

The following programmes are currently being implemented

- National Agricultural Land Resource Monitoring System – 1: 1 000 000 scale (this System will incorporate existing spatial data as well as updated land-cover information, NOAA satellite data and fixed reference sites).
- More detailed inventory on the conservation status of the agricultural land resources at a 1:250 000 level. This data will be collected in collaboration with the PDAs. This methodology is based on Landsat 7 satellite data interpretation, fieldwork and GIS modelling.
- The directorate is also implementing a digital camera system on board its helicopter for detailed aerial surveillance of the natural agricultural resources. This system will form part of both monitoring systems (1:1 000 000 and 1:250 000).

- **Subdivision of Agricultural Land**

The Repeal Bill, Act 64 of 1998, which is still to be promulgated upon the President's signature, has initiated a process of planning in collaboration with the relevant authorities and interested parties, so as to prevent any possible "vacuum", in between relevant Acts and Ordinances presently being reviewed or repealed, to take place. Furthermore the Constitution determines that planning decision responsibilities rest with the Local Government viz. Municipalities. The borders of the Municipalities were only recently determined, prior to the December 5, 2000 elections.

- **LandCare**

The LandCare programme is a community-based and government supported sustainable land management programme. It offers practical assistance to effect land conservation activities that are identified, implemented and monitored mainly by the farming community.

There are five components of LandCare:

- Projects
- Awareness and education

- Capacity building
- Policy and legislation, and
- Monitoring and evaluation

The objectives of the Programme are as follows:

- Promote partnerships between the communities, the private sector and government in the management of natural resources;
- Establish institutional arrangements to develop and implement policies, programmes and practices that will encourage the sustainable use of natural resources and create job opportunities
- Encourage skills development for sustainable livelihoods
- Encourage opportunities for the development of business enterprises with a sustainable resource management focus; and
- Enhance the long-term productivity of natural resources

It is envisaged that LandCare South Africa will be people-driven and government supported. It will consist of numerous community-based sustainable land use projects supported by both the public and private sector through a series of partnerships. It is essentially geared towards the improvement of the quality of life of rural people, particularly those from disadvantaged backgrounds, through the sustainable utilization of agricultural resources and the resultant creation of economic opportunities, including entrepreneurial development and sustainable job creation.

The programme is managed through three policy documents : the Implementation Framework (February 1999) and Guides for 2000/2001 relating to Focused Investment and Small Community Grants.

During December 2000 a Strategic Planning Workshop with 65 stakeholders was held. Active participation of the PDA's is encouraged. Through this programme, in addition to the economic and social upliftment of communities, there is maintenance and improvement of the sustainable capacity of the environment.

The LandCare programme seeks to address the following NEMA principles: 2(2), 2(3), 2(4)(a)(i)(v)(vi), 2(4) (d) (f) (g) (h) (i) and (q).

• WOCAT

This global programme of the International Soil Conservation Organization (ISCO) is currently co-ordinated by the Centre for Development and Environment (CDE) in Berne, Switzerland. The Directorate, with the ARC-ISCW, is involved in its implementation in South Africa.

The goal of WOCAT is to contribute to the sustainable use of soil and water through collection, analysis and presentation of Soil and Water Conservation (SWC) Technologies and Approaches world-wide, to promote improved decision making and land management. WOCAT uses a standardized framework for the evaluation of SWC in the form of comprehensive questionnaires. Envisaged outputs are an accessible database, books and maps for each continent.

The directorate is implementing the programme in South Africa as a means of technology transfer, capacity building and promotion of resource conservation. The programme will also assist the NDA in fulfilling some of its international obligations (UNFCCC, CCD and others).

- **AGIS**

The strategic vision of the Agricultural Geo-referenced Information System (AGIS) is to facilitate access to structured, integrated, relevant, reliable and timely data, information and decision support systems for the Agricultural Sector of South Africa. Policy makers, researchers, extension officers and rural communities can acquire information through the Internet at national, provincial and local level on agricultural related issues, including the environment, to enhance effective decision making.

The objective of AGIS is to establish a holistic, integrated and user-friendly model for the users to acquire agricultural information on the Internet within a three-click environment. Elements of this information and decision support system include strategy/policy formulation tools, planning tools, extension and technology transfer, early warning, advisories and forecasts.

Information relating to the agricultural natural resources will be available for use of all concerned in ensuring sustainable development and minimizing negative environmental effects.

The activities of the Directorate relating to natural resource management, monitoring and auditing address all of the NEMA principles: 2(2), 2(3) and 2(4).

3.5 Directorate Agricultural Water Use Management

- **Promotion of Water and Soil Conservation and Utilization**
Further development of policies, norms, standards and guidelines for agricultural water systems, irrigation and engineering aspects of soil conservation.
- **Establishment and maintenance of Key Soil Conservation Works**
Identification, planning and design in consultation with communities.
- **Provision of Stock Water Drilling Services**, with the minimum potentially negative effect on the environment.
- **Flood relief interventions**
In carrying out these programmes, which are directly related to natural resource management and their sustainable utilization, virtually all the NEMA principles are important and addressed: 2(2), 2(3) and 2(4).

3.6 Directorate Genetic Resources

- **Animal improvement**

Policy to link with the UN-CBD re the introduction of new breeds and the exportation of breeds to other countries. Implementation of policies regarding animal improvement. There will be strict application of procedures re the introduction of new breeds.

- Plant Improvement

Continuation of the testing of new varieties of propagating material according to the "DUS" test (distinguishability, uniformity and stability).

- Plant Breeders' Rights

Optimization of membership of the International Union for the Protection of New Varieties of Plants. (UPOV).

- Genetically Modified Organisms

Implementation of permit system relating to GMOs to optimize advantages and minimize potentially negative environmental impact.

The following NEMA principles are specifically addressed:
2(2), 2(3), 2(4)(a)(vi), (vii), (viii), (b) (e)-(g), (i), (j), (q).

3.7 Directorate Veterinary Services

The directorate works in close collaboration with the Veterinary Services of the PDA's, who are responsible for implementation of policies and programmes.

National programmes include *inter alia*:

- Develop an animal disease contingency plan
- Develop an animal disease surveillance programme
- Initiate dipping service in communal areas, thereby strengthening the surveillance programme
- Promote animal health and food safety awareness
- Facilitate the implementation of a meat hygiene management system
- Facilitate the reduction of veterinary import and export risk
- Participate in establishing a combined food control agency, together with the Department of Health.

Of particular importance are diseases transmissible to humans (e.g. Tuberculosis, Brucellosis, Rabies), controlled animals diseases (e.g. Foot- and Mouth disease, African Swine Fever) and economic erosion diseases that can influence livelihoods of individuals and international trade.

The following NEMA principles are relevant: 2(2), 2(3), 2(4)(a)(iv), (vi-viii), (b), (e)-(g) (i), (j), (q).

3.8 Directorate Plant Health and Quality

The following key policies, plans and programmes are associated with the primary functions of the Directorate:

- **Organic Production**
The Agricultural Product Standards Act of 1990 (Act No. 119 of 1990) forms the basis for the establishment of organic production norms and standards, guidelines for establishment of certification bodies and for their auditing. A draft organic production norms and standards document was circulated for comments in May 2000. There is growing awareness of the merits of organic production, and especially of its environmental advantages.

NEMA norms and principles applicable: Section 4(a)

- **Integrated Production of Wine**
 - The Liquor Products Act of 1989 (Act No. 60 of 1989) provides for the establishment of schemes like the Integrated Production of Wine Scheme. The aim of the scheme is to reduce pollution of the environment and to protect natural resources by judicious use of agricultural chemicals. The scheme also promotes the production of wine profitability in an environmentally friendly manner.

NEMA norms and principles applicable: Section 4(a)

- **Import Control**
 - International standards and guidelines
Essential that officials will participate in the drafting and revision of standards and attend working group meetings in accordance with IPPC schedule.
 - Act (Agricultural Pests Act)
To be revised with IPPC, International Standards and WTO-SPS principles.
 - Pest Risk Analysis (PRA) in accordance with International standards and principles National model based on international standards to be implemented. Environment needs to be assessed and managed within the scope of the National Model.
 - Authorisation in accordance with current legislation
Subject to results of PRA and must be technically justified. Requires a large input.
 - Import Control executed in accordance with current legislation
Enhance effective and efficient import control system through prioritization of risk areas, public awareness and implementation of new procedures and techniques. Communication infrastructure and participation on NIDS, OBCO and IMCO Committees. Liaison with other regulating authorities e.g. Health inspectors and Nature Conservation Officials.
- **Provision of high quality plant propagation material and bio-control agents and organisms for research**
 - Policy with regard to high-risk plant propagation material, evaluation and release

do not have an environmental impact as the evaluation is conducted in secure facilities. In all cases it includes commercially and economically beneficial crops free from quarantine pests.

Import evaluation and release are concluded in accordance with the national protocol. In this process the principle of shared responsibility is applied by means of ongoing liaison with all relevant and interested stakeholders.

Evaluation and release as deemed necessary according to safe quarantine principles.

- Evaluation and release of bio-control agents and other "beneficial" organisms are based on international standards and guidelines as well as national protocols and relevant import conditions based on the PRA results.

Import evaluation and release are concluded in accordance with the national protocol, including on going liaison with relevant stakeholders, meetings with consultative committees and release on recommendation by consultative committee.

- **Export control**

- **International standards and guidelines**

Essential that officials participate in the draft and revision of standards and attend working group meetings in accordance with IPPC schedule. Service is rendered on request and to achieve the objective outlined in the plant. Essential that responsible officials liaise with interested stakeholders before the issuance of phytosanitary certificates.

All those activities that may have an impact on the environment with regard to the following principles of NEMA are applicable: 2(2), 2(3), 2(4)(a)(i)(ii)(vii)(viii), 4(b), 4(f), 4(g), 4(k), 4(l), 4(n). All neighbouring SADC countries are also informed of actions taken.

3.9 Directorate Agricultural Production Inputs

The Directorate provides advice on registration of fertilizers, farm feeds, agricultural remedies, stock remedies, sterilizing plants and pest control officers. This is both administrative as well as technical through full time staff supported by external consultants who are specialists in their respective fields. There is especially good liaison with industry associations, as indicated and listed in Chapter 1.

A number of current priority projects related to safety, awareness and minimizing of negative environmental impacts include:

- disposal of obsolete pesticides
- disposal of empty pesticides containers
- phasing out of methyl bromide

- production and updating of practical guides on the control of plant pests, control of plant diseases, control of household and industrial pests, use of plant growth regulators, defoliants and desiccants and guide to the use of herbicides.

There is ongoing, dynamic revision of registration requirements in full consultation with especially industry associations and technical consultants. Conformity is encouraged through awareness and administrative means, although the legal path is followed where and when necessary.

The following NEMA principles are relevant:

2(2), 2(3), 2(4)(a)(ii), (iv), (vi),(vii), (viii), (b)-(q).

3.10 Onderstepoort Biological Products

Previously an integrated part of the NDA, Onderstepoort Biological products was recently privatized.

They have no regulating function and are primarily involved in the preparation and marketing of vaccines and other biologicals that are used for the improvement of animal production.

OBP is well advanced in the implementation of ISO 14001 as part of their ISO 9001 quality system and have procedures in place to minimize potentially negative environmental effects associated with their activities. These are contained in an Environmental Policy Document (OBP-E-01).

The following NEMA norms and principles apply.

Section 2(2), 2(3), 2(4)(a)(i) to (viii), 2(4)(b), 2(4)(c), 2(4)(d), 2(4)(e), 2(4)(f) to (h), 2(4)(i), 2(4)(j), 2(4)(k), 2(4)(l) to (m), 2(4)(n), 2(4) (o) to (p), 2(4)(q), 2(4)(r).

3.11 Evaluation of Grouped Programmes in terms of NEMA principles

The various programmes of the NDA have been clustered into three groups:

- Sustainable Resource Management Programmes (Table 5.1)
- Regulatory Programmes (Table 5.2)
- Farmer Settlement/Redistribution of Land Programmes (Table 5.3)

Some degree of overlap is inevitable, although it has been minimized as far as possible.

Table 5.1 Summary of Evaluation of Sustainable Resource Management Programmes in terms of clustered NEMA principles

Clustered NEMA Principles	Relevant Principles	Mechanisms/programmes in place to conform to the principle
Sustainable Development	Pollution	<ul style="list-style-type: none"> • Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No. 36 of 1947). Fertilizers, agrochemicals, disposal of obsolete stocks and used containers, control of migratory pests, weeds and alien vegetation. Registration of sterilizing plants and pest control officers. Appropriate regulations. • Agricultural Pests Act, 1983 (Act No. 36 of 1983). Control of migratory pests, weeds and alien vegetation – limitation of negative impacts, including pollution. • Draft regulations on pollution caused by intensive farming. • Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983). Regulations governing control measures, weeds and invader plants, directives and conservation committees: cultivation of virgin soil, soil with steep slopes (>20%), protection against erosion by water and wind, prevention of waterlogging and salination of irrigated land, utilization and protection of vleis, marshes, water sponges and water courses, flow pattern of run-off water, protection of veld, grazing capacity, veld fires, restoration and reclamation. • Programmes: Land Resource Monitoring, LandCare, WOCAT, AGIS, key soil conservation works, stock water drilling services.
	Waste	<p>Abattoir Hygiene Act, 1992 (Act No. 121 of 1992), superceded by Meat Safety Act, 2000 (Act No. 40 of 2000). Waste from abattoirs. Implementation by Veterinary Services of PDAs.</p> <p>Draft regulations for intensive farming systems: feed lots, pig farming, poultry, recycling, waste water.</p>

Clustered NEMA Principles	Relevant Principles	Mechanisms/programmes in place to conform the principle
	Disturbance of Landscapes	<p>Regulations relating to Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983) regarding cultivation of virgin soil, soils with slopes >20%, vleis, marshes, water sponges and water courses, flow patterns of run-off water, soil erosion, veld management. Designed to minimize negative effects on the environment.</p>
	Renewable Resources	<p>Requirement to produce EIAs (DEAT Regulations).</p> <p>Regulations relating to Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983). Adequate attention to veld management, air pollution from veld fires and water (vleis, marshes, water sponges and water courses). Prevention of waterlogging and salination of irrigation schemes. Promotion of water and soil conservation and utilization.</p>
	Non-renewable Resources	<p>Flood Relief Interventions.</p> <p>For all practical purposes, soil should be regarded as a non-renewable resource. All actions to curb its degradation and loss are therefore vital. (Cross-reference to degradation and disturbance of landscapes).</p>
	Risk averse and cautious approach	<p>Regulations are drawn up as realistically and cautiously as possible, bearing environmental concerns in mind.</p>
	Negative impacts to be anticipated	<p>Despite Acts and regulations degradation still takes place at an alarming rate. All possible mechanisms need to be utilized to improve this situation.</p>

Clustered NEMA Principles	Relevant Principles	Mechanisms/programmes in place to conform the principle
Integration of environmental considerations into decision-making	<p>Environmental management integrated</p> <p>Impact assessment</p> <p>Responsibility throughout life cycle</p>	<p>Community based natural resource management (CBNRM). DLA/ DANCED project, integrating environmental concerns into land reform.</p> <p>Natural Resource Monitoring in terms of Conservation of Agricultural Resources Act, 1983.</p> <p>Most of the programmes are ongoing and provision is made for minimizing negative environmental impacts. In the case of potentially dangerous agrochemicals regulations are in place from production, through usage, to disposal of spent containers. Training and registration of pest control officers.</p>
Participation, empowerment and transparency	<p>Participation of interested/affected Parties</p> <p>Community well being/empowerment</p> <p>Transparent decisions</p> <p>Access to information</p>	<p>Control of migratory pests: guidelines drawn up with interested/affected parties.</p> <p>Land redistribution : CBNRM approach</p> <p>Most regulations : participatory approach with major stakeholders</p> <p>Farmer Development and Support : CBNRM approach.</p> <p>LandCare : one of its major objectives.</p> <p>Participation in planning and decision making with respect to regulations and acts. Ample opportunity for inputs during the preparation process.</p> <p>Mostly reasonable, but dispersed. The AGIS programme, whereby all applicable data is being integrated into a user-friendly IT environment, is specifically aimed at improving this aspect.</p>

Clustered NEMA Principles	Relevant Principles	Mechanisms/programmes in place to conform the principle
	<p>Role of women and youth</p> <p>Environment held in public trust and resources serve public interest</p> <p>Impacts not to unfairly affect anyone</p> <p>Equitable access to environmental resources to meet basic needs</p> <p>Workers' right to refuse environmentally hazardous work</p> <p>Polluter pays</p> <p>Peoples' needs at forefront of environmental management</p>	<p>It is a priority area of the NDA to redress inequalities with respect to women and youth. The LandCare programme, especially, addresses this.</p> <p>Conservation of Agricultural Resources Act, 1983. (Act No. 43 of 1983) seeks to minimize adverse effects of agricultural activities, thus preserving the natural resources for future generations.</p> <p>Fertilizers, Farms Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No. 36 of 1947). Appropriate regulations to ensure safe handling of potentially harmful agrochemicals. Training and registration of pest control officers. Farmer development and support following redistribution of land.</p> <p>Land redistribution and development programme (LRAD) to redress inequitable access to land in the past, whilst ensuring sustainable development and environmental integrity.</p> <p>The NDA attempts to prevent adverse health implications of any interventions, by making information thereon available (appropriate labelling of agrochemicals, training of pest control officers etc.).</p> <p>This principle is being increasingly incorporated, although it is often difficult to evaluate and implement.</p> <p>Farmer Settlement and Development: CBNRM approach, DLA/ DANCED project. Integrating peoples' needs with natural resource utilization.</p> <p>Consultative process in drawing up regulations for agrochemical usage and soil and water conservation. Conservation committees at local levels.</p>

Table 5.2 Summary of Evaluation of Regulatory Programmes in terms of clustered NEMA principles

Clustered NEMA Principles	Relevant Principles	Mechanisms/programmes in place to conform the principle
Sustainable Development	Pollution	<p>Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947. (Act No. 36 of 1947). Fertilizers, agrochemicals, disposal of obsolete stocks and used containers, control of migratory pests, weeds and alien vegetation. Registration of sterilizing plants and pest control officers.</p> <p>Agricultural Pests Act, 1983 (Act No. 36 of 1983). Control of migratory pests, weeds and alien vegetation – limitation of negative effects, including pollution.</p> <p>Draft regulations on pollution caused by intensive farming.</p>
	Degradation	<p>Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983). Regulations relating to natural resources (See Table 4.1).</p>
	Waste	<p>Meat Safety Act, 2000 (Act No. 40 of 2000). Waste from abattoirs, import and export of meat. Draft regulation for intensive farming systems, including handling of waste from slaughter facilities.</p>
	Disturbance of Landscapes Renewable Resources	<p>Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983). (See Table 4.1).</p> <p>Regulations for Conservation of Natural Resources in terms of Act 43 of 1983. Promotion of soil and water conservation.</p> <p>Agricultural Pests Act, 1983 (Act No. 36 of 1983). Prevention of introduction and establishment of pests. Import and export control.</p> <p>Animal Diseases Act, 1984 (Act No. 35 of 1984). Animal health, disease, import and export. Agricultural Product Standards Act, 1990 (Act No. 119 of 1990). Standards, quality marking, organic production.</p>

Clustered NEMA Principles	Relevant Principles	Mechanisms/programmes in place to conform the principle
Integration of environmental considerations into decision-making		<p>Genetically modified Organisms Act, 1997 (Act No. 15 of 1997). Strict procedures in place. Adherence essential.</p> <p>Plant Improvement Act, 1976 (Act No. 53 of 1976). Testing of new varieties. Environmental management.</p> <p>Animal Improvement Act, 1998 (Act No. 62 of 1998). Regulates all animals used for agriculture.</p>
	Non-renewable Resources	Soil conservation and sustainable utilization. Natural agricultural land monitoring (Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)).
	Risk averse and cautious approach	Regulations are drawn up realistically yet conservatively, with adequate stakeholder involvement, taking environmental concerns into account.
	Negative impacts to be anticipated	Strict control over introduction of organisms into the environment is essential, especially relating to GMOs.
	Environmental management integrated	This is largely the case, with evaluation programmes and regulations designed to integrate agricultural production with environmental concerns.
	Impact assessment	Needs to be developed. Compliance with international approaches. Improvement in health (plant, animal, human).

Clustered NEMA Principles	Relevant Principles	Mechanisms/programmes in place to conform the principle
Participation, empowerment and transparency	Responsibility throughout life cycle	Regulations are updated on a regular basis and are geared to ensuring responsible interventions to ensure sustainability and environmental integrity.
	Participation of interested/affected parties	In most cases a participatory approach is followed with major stakeholders in drawing up and modifying regulations.
	Community well being/empowerment	Legislation to ensure this, drawn up with stakeholder participation.
	Transparent decisions	Participation in planning process for regulations and acts encouraged.
	Access to information	Patchy and diffuse. The AGIS programme aims to improve accessibility and applicability of information.
	Role of women and children	Taken into account. NDA priority.
	Environment held in public trust and resources serve public interest	Legislation and regulations seek to minimize negative environmental effects.
	Impacts not to unfairly affect anyone	Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947(Act No. 36 of 1947) ensures safe handling of potentially harmful agro-chemicals. Registration of trained pest control officers.
	Workers' right to refuse environmentally hazardous work	Attempts are made to minimize adverse effects of interventions (labeling of agrochemicals for content, usage and potential negative effects). Training of pest control officers.
	Polluter pays	This principle will increasingly be included in regulations.

Clustered NEMA Principles	Relevant Principles	Mechanisms/programmes in place to conform the principle
<p>Ecological integrity</p> <p>International responsibilities</p>	<p>Peoples' needs at forefront of environmental management</p> <p>Disturbance of ecosystems/loss of Biodiversity</p> <p>To be discharged in the public interest</p>	<p>Consultative process in drawing up regulations</p> <p>Interventions take into account minimizing disturbance of ecosystems and loss of biodiversity. Integrated pest management, rather than non-selective chemical approaches.</p> <p>NDA involved in International Environmental Conventions, with DEAT as lead agency. The most important in this cluster is:</p> <ul style="list-style-type: none"> • Convention on Biological Diversity <p>There is also involvement with a large number of International Organizations.</p> <p>SPS (Sanitary and Phyto-Sanitary Agreement)</p> <p>ISSTA (International Seed Testing Association)</p> <p>OIE (World Organization for Animal Health) Deals with control measures (Annual Congress)</p> <p>SADC</p> <ul style="list-style-type: none"> • Livestock sector – import, export, genetic resources • Crop Sector – food, agriculture and natural resources <p>FAO</p> <ul style="list-style-type: none"> • Food Security Vulnerability Mapping • Livestock – domestic animal diversity information system • International undertaking on Plant Genetic Resources for food and agriculture • FAO/WHO - Food Safety Programme

Clustered NEMA Principles	Relevant Principles	Mechanisms/programmes in place to conform the principle
		<ul style="list-style-type: none"> • FAO/WHO – PIC (prior informed consent) programme for moving hazardous agrochemicals across borders • FAO/WHO – POPs (Persistent organic pollutants) programme • CODEX Alimentarius <ul style="list-style-type: none"> - CODEX Committee on Pesticide Residues - Joint programme on Food Safety

Table 5.3 Summary of Evaluation of Farmer Settlement/Redistribution of Land Programmes in terms of NEMA principles

Clustered NEMA Principles	Relevant Principles	Mechanisms/programmes in place to conform the principle
Sustainable Development	Pollution	<ul style="list-style-type: none"> • LRAD (Land Redistribution for Agricultural Development) programme, a sub-programme of the Land Redistribution Programme of DLA, involves settlement of farmers on land for agricultural purposes and considers their development and sustainability of the projects, including minimizing pollution.
	Degradation	<ul style="list-style-type: none"> • LRAD programme of sustainable resettlement. Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983). Regulations governing utilization of natural resources (Table 4.1). Programmes : Land Resource Monitoring, LandCare, WOCAT, AGIS, key soil conservation works, stock water drilling services.
	Waste	Expected to be relatively dispersed in rural areas. Draft regulations for more intensive farming systems.
	Disturbance of Landscapes	Regulations relating to the Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983) (See Table 4.1) are in place, should this be necessary. EIA's to be carried out.
	Renewable Resources	Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983) – regulations.
	Non-renewable Resources	Relating especially to sustainable utilization of soil.
	Risk averse and cautious approach	LRAD Programme is being approached in an integrated Land Development Objective (LDO)/Integrated Development Plan (IDP) process with the District level as the focal point of delivery.
	Negative impacts to be anticipated	<p>Possible degradation to be minimized. Natural resource monitoring in place.</p>

Clustered NEMA Principles	Relevant Principles	Mechanisms/programmes in place to conform the principle
Participation, empowerment and transparency	Participation of interested/affected parties	Land Redistribution : CBNRM approach DLA/DANCED project involvement
	Community wellbeing/ empowerment	CBNRM approach LandCare programme
	Transparent decisions	CBNRM approach
	Access to information	Needs improvement. AGIS project will provide appropriate information in a user-friendly, accessible form.
	Role of Women and youth	Priority area of the NDA to address inequalities in respect of women and youth. The LandCare programme, addresses this specifically.
	Environmental management integrated	Farmer Settlement and Development: integrated development planning. Land Reform for agricultural development (LRAD). Community based natural resource management (CBNRM) DLA/DANCED project, specifically integrating environmental concerns into land reform.
	Impact Assessment	Natural resource monitoring in terms of conservation of Agricultural Resources Act, 1983. Indicators of economic and social sustainability need to be developed.
	Responsibility throughout life cycle	Environmental management processes and plans must be human centred and based on the integrity of the natural environment of the local area.
	Environment held in public trust and resources serve public interest	CBNRM approach Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983).

Clustered NEMA Principles	Relevant Principles	Mechanisms/programmes in place to conform the principle
Environmental justice and equity	<p>Impacts not to adversely affect anyone</p> <p>Equitable access to environmental resources to meet basic needs</p> <p>Workers' rights to refuse environmentally hazardous work</p> <p>Peoples' needs at forefront of environmental management</p>	<p>Ensured sustainable natural resource management. Regulations relating to Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983).</p> <p>LRAD programme, redressing inequalities of the past.</p> <p>Information on appropriate labeling of agrochemicals, training of pest control officers, etc. in terms of Fertilizer, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No. 36 of 1947), attempts to minimize hazards.</p> <p>CBNRM approach</p> <p>DLA/DANCED project involvement. Integrating peoples' needs with natural resources utilization.</p>
Ecological integrity	Disturbance of ecosystems/loss of biodiversity	Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983). Regulations governing envisaged landuse change. Important to be considered in redistribution of land.
International Responsibilities	To be discharged in the public interest	Several international relationships applicable (See Table 4.1). Danish initiative (DLA/DANCED).

CHAPTER 4 : RECOMMENDATIONS

4.1 Introduction

As should be clear from the discussions to date, the activities and responsibilities are fairly Directorate specific : this is also the case with the recommendations.

What is generic to virtually all directorates, however, is the need to expand capacities of their staff to carry out their mandates. Capacity building, and appropriate training, are therefore considered to be vitally important.

Another generic aspect is the potential for international contact and co-operation. Although South Africa has much to gain from the experiences of other countries, we also have a lot to offer. In this regard South Africa can play a very important role in sharing and developing its expertise with SADC and, indeed, the rest of Africa.

More specific recommendations are discussed on a directorate basis, largely emanating from their Business Plans, which are updated annually.

4.2 Directorate Farmer Settlement and Development

- That Environmental Impact Assessments (EIAs) be carried out where necessary
- That the LRAD Programme be implemented in an equitable and sustainable manner.
- That the principles of the DLA-DANCED project, integrating environmental concerns into land reform, be implemented.

4.3 Directorate Business and Institutional Development

- That effective guidelines be established for the management of drought, floods and other extreme climate events.
- That an effective Food Security Programme be developed and implemented to the advantage of especially the poor and disadvantaged with sustainable utilization of resources and at no negative cost to the environment.

4.4 Directorate Agricultural Land Resource Management

- That the new National Spatial Planning Act to co-ordinate the decentralization process be administered in such a way that the transition of land is in agreement with NEMA principles.
- That the Fencing Act, No 31 of 1963, be reviewed.
- That the Agricultural Pests Act, No 36 of 1983, to implement blackfly and locust policies and those relating to other migratory pests, be revised.
- That ongoing attempts be made to implement environmentally friendly pest control.
- That international initiatives be developed, and international obligations accepted and implemented.
- That natural resource monitoring and auditing systems be developed to report on the impact of agricultural practices on the natural environment. The final results of an

audit of the natural agricultural resources in the Mpumalanga and Gauteng Provinces will be used to develop a national monitoring/auditing strategy.

- That involvement on the Management Board of WOCAT (World Overview of Conservation Approaches and Technologies) be used to optimize collection and decimation of information on soil and water technologies and approaches.
- That the LandCare programme be utilized to make all stakeholders aware of their responsibilities of contributing to sustainable utilization of the natural resources: development of a true love of the land.

4.5 Directorate Agricultural Water Use Management

- That the liaison committees be utilized to maximum effect to ensure full involvement of all stakeholders.
- That environmental impact studies be carried out for all projects.
- That community involvement be obtained from the planning stages and all stages thereafter for future conservation works and irrigation schemes.

4.6 Directorate Genetic Resources

- That all animals used for agriculture, including aquatic species, be incorporated into the Animal Improvement Act, 1998 (Act No. 62 of 1998). This includes freshwater crayfish that are currently classed as insects and fall under Plant Protection legislation.
- That international contact, with organizations such as UPOV (International Union for the protection of New Varieties of Plants) be expanded.
- That the procedures for dealing with GMOs (Genetically modified organisms) be diligently applied.
- That contact with the private sector, such as with SANSOR (South African National Seed Organization) be expanded to mutual benefit.

4.7 Directorate Veterinary Services

- That international guidelines be adhered to in disease control.
- That the relationships with the PDAs be strengthened to ensure effective disease monitoring and control.
- That regional co-operation be maintained and expanded.

4.8 Directorate Plant Health and Quality

- That an environmental management programme relating to the key performance areas of import control, provision of high quality plant propagation material and bio-control agents and organisms for research and export control with respect to regulated articles be maintained.
- That international standards and guidelines be adhered to.
- That all regulated actions be technically justified and that the release of exotic organisms and potentially invasive plant species into the environment only be done after appropriate consultation and approval of all relevant stakeholders.

- That the certification of organic production norms and standards by organic certification bodies be controlled and auditing in order to safeguard the environment during production.

4.9 Directorate Agricultural Production Inputs

- That awareness of all stakeholders be made of the environmental implications of the usage of different agrochemicals.
- That safety and public health be considered in the use of different agrochemicals.

4.10 Onderstepoort Biological Products

Although no longer a formal part of the NDA, OBP is currently implementing the principles of the ISO 14000 environmental management system, which is completely compatible with NEMA. Their recommendation is that it be more widely considered for general implementation throughout the NDA.

4.11 General

- ISO standards

The ISO Technical Committees on quality management and assurance, and environmental management and environmental auditing and related environmental investigations have now been combined.

These activities are now handled by the Joint Working Group on Quality and Environmental Auditing.

The latest working draft is ISO/CD.3 19011:2002, Guidelines on quality and/or environmental management systems auditing.

On its publication International Standard ISO 19011 will replace ISO10011-1, ISO 10011-2, ISO 10011-3, ISO 14010, ISO 14011 and ISO 14012.

Locally these activities are coordinated by the South African Bureau of Standards. SABS Technical Committees 180 and 207 form the Joint Working Group for Quality and Environmental Auditing.

Some directorates have considered this approach, and it could be fruitful to pursue it on a broader basis.

- That interdirectorial responsibilities to International Conventions be identified and managed.
- EIP/EMP

As most of the activities of the NDA regarding environmental aspects have a strong legal and management emphasis, it is recommended that the second edition document, to be prepared by the NDA, should preferably be an EIMP or EMP. It is recommended that the appropriate legislation be formulated by DEAT to make this amendment possible.

Addendum : Suggested Key Performance Indicators

A1 Introduction

It was clear during the process of developing this EIP that the identification of appropriate indicators was challenging and yet extremely daunting.

Not all directorates were able to come up with suitable indicators at this stage, at least not ones that are currently consciously being utilized. Most directorates are working on their identification and development and it is trusted that this will be addressed more fully and satisfactorily in future.

The following is a list of suggested indicators, again for specific directorates and activities.

A2 Directorate Farmer Development and Support

- Sustainable development indicators

These will need to be developed, possibly in cooperation with other institutions such as the ARC, universities and technikons

- EIAs carried out for projects
- Environmental management processes and plans should be human centered and based on the integrity of the natural environment of the local area.
- Civil society, government and stakeholders, including beneficiaries, should be involved.
- Suitable indicators need to be identified

- Indicators for implementation

These need to be developed, and could include:

- Resettlement economically, socially and environmentally sustainable.

A3 Directorate Business and Institutional Development

- Sustainable development indicators

- Improved household food security
- Sustainable development ensured
- Effective inventories after disasters

- Indicators for implementation

- Effective programmes for food security at local level
- Early warning systems implemented and effective

A4 Directorate Agricultural Land Resource Management

- **Sustainable Development Indicators**

The Directorate is funding research for the development of indicators to report on the impact of agricultural practices on the natural environment. The first indicators will be published in 2001. Examples of indicators are the following:

- Soil and vegetation quality
- Land-cover distribution on high potential agricultural land
- Agricultural practices on land with a risk of degradation
- Rain use efficiency (desertification)

- **Control of migratory pests**

The directorate, together with the ARC-PPRI, is developing a decision support system for quelea management, which will include indicators for the impact on the environment and remediation thereof.

Possibilities are:

- Total surface area habitat controlled for a period
- Total volume avicide used for a specific area
- Number of control operations
- Non-target species affected

A similar approach could be applied to other migratory pests.

- **Implementation**

- Number of inspections, directives or prosecutions (Act No. 43 of 1983)
- Sustainability increased (Indicators need to be identified)

A5 Directorate Agricultural Water Use Management

- **Sustainable Development Indicators**

Possibilities include:

- Successful settlement of farmers on irrigation schemes
- Improved supply of water for stock
- Successful completion of key soil conservation works
- Improved adoption of conservation principles
- Field office technical guide
- Norms and guidelines for environmental impact studies related to resource conservation

- **Implementation**

- Community acceptance, involvement and implementation

- Other indicators

A6 Directorate Genetic Resources

- Sustainable Development Indicators
 - Increased amounts of propagating material available, complying with minimum physical and genetic requirements of the Plant Improvement Act.
 - Decreased number of complaints from clients about quality of seed and other propagating material.
 - GMOs complying with evaluation criteria
 - More satisfied clients
- Implementation
 - Availability of acceptable plant propagating material
 - GMOs effectively handled

A7 Directorate Veterinary Services

- Sustainable development indicators
 - Containment of disease (e.g. Foot and Mouth Disease) and improvement in animal health
 - Reduction of pollution from effluents
 - Food safety and a reduction in food poisoning caused by food of animal origins.
- Implementation
 - Acceptance of principles and co-operation in implementation

A8 Directorate Plant Health and Quality

- Sustainable development indicators
 - Improvement in plant health
 - Increased availability of healthy plant material
 - Improved quality of agricultural products
 - Increased availability of organically grown products
- Implementation
 - Compliance with international obligations and requirements
 - Implementation of organic production procedures

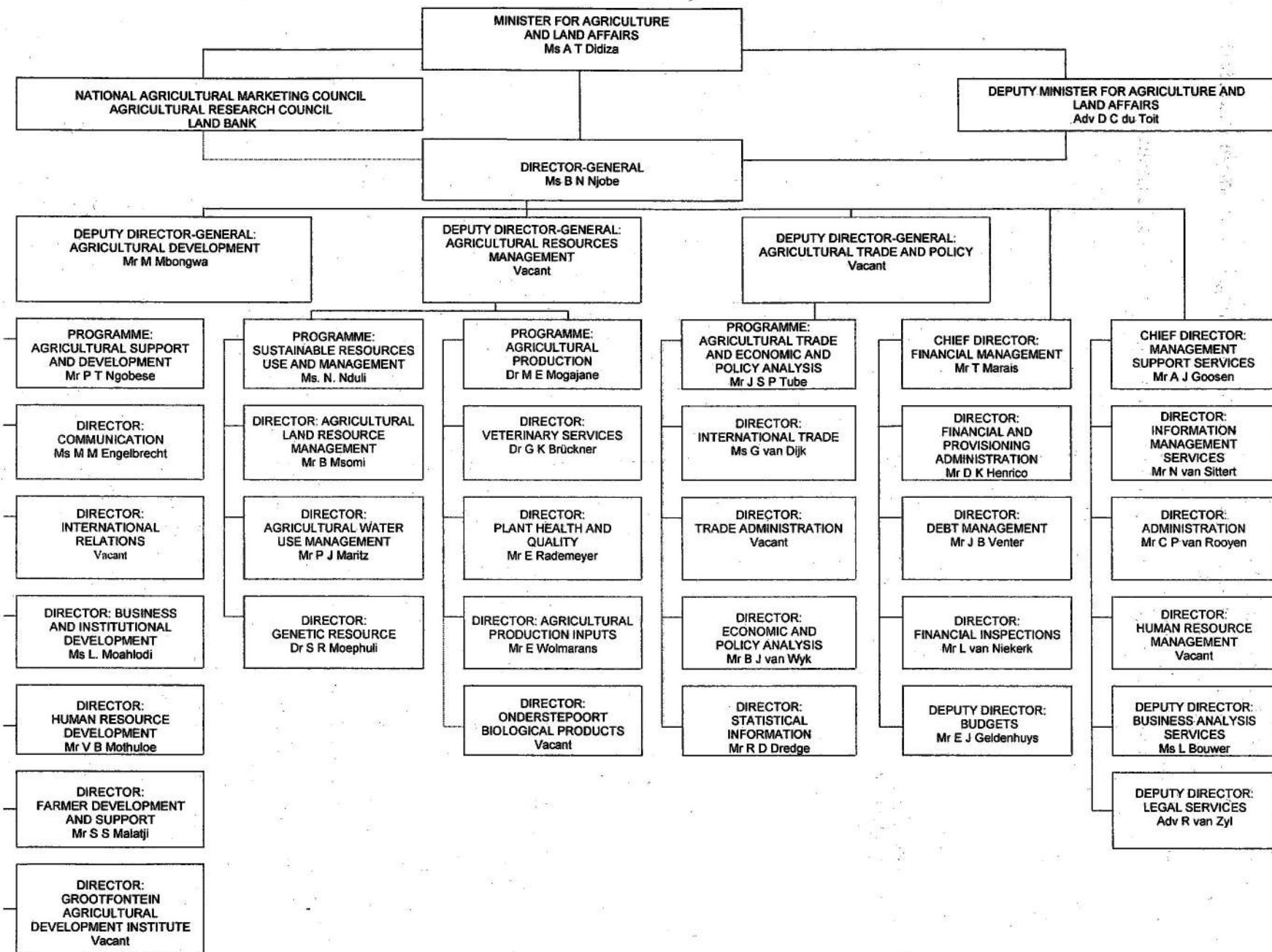
A9 Directorate Agricultural Production Inputs

- Sustainable development indicators
 - Compliance with international agreements on undesirable agrochemicals or environmental requirements
 - Improved knowledge and expertise in handling agrochemicals

- **Implementation**

- Number of prosecutions/litigations
 - Action taken against errant registration holders and illegal operators (inputs/sales)
 - Efficiency of service delivery
 - Number of registrations
- Currently in excess of 20 000 individual registrations (renewable annually).

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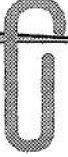
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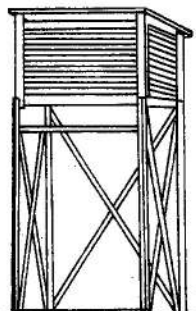
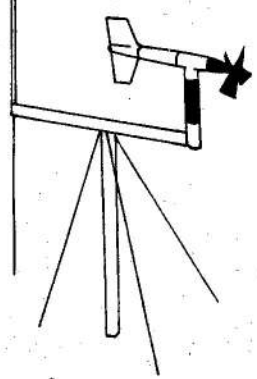
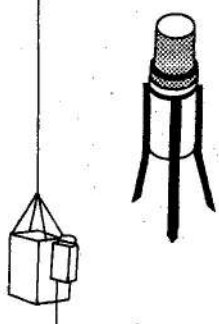
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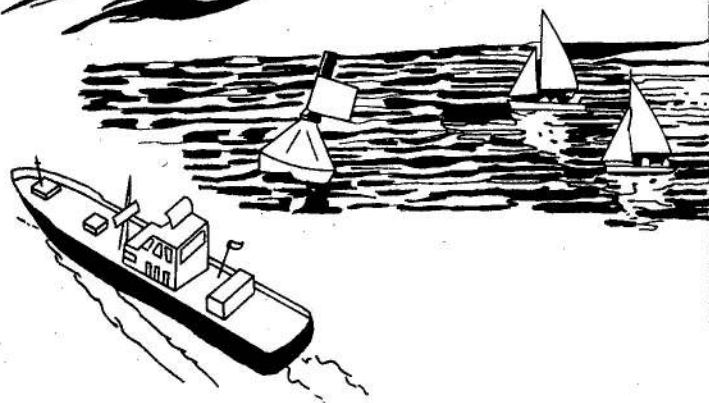
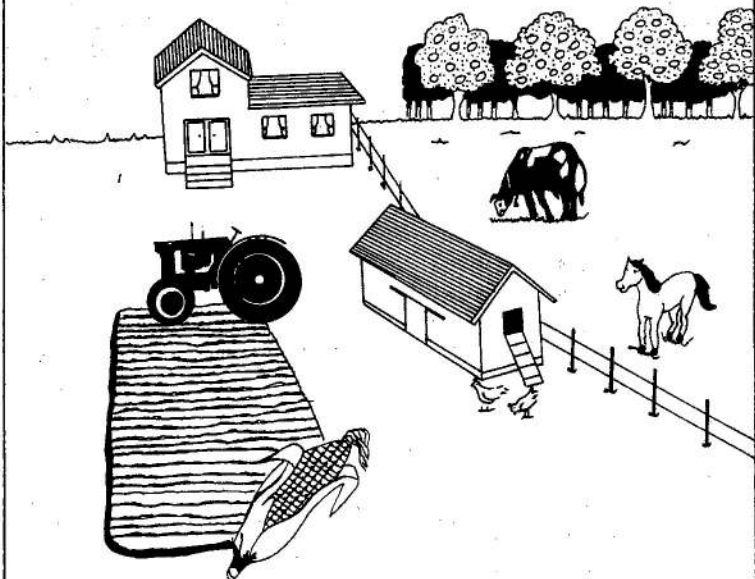
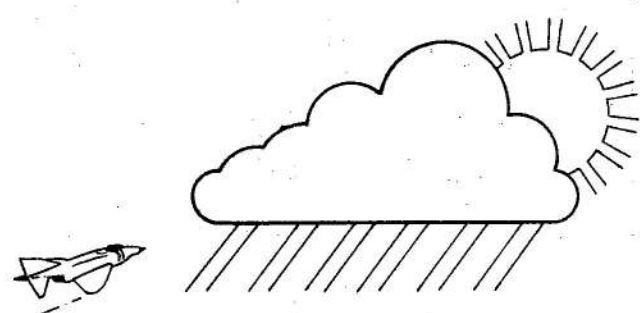
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