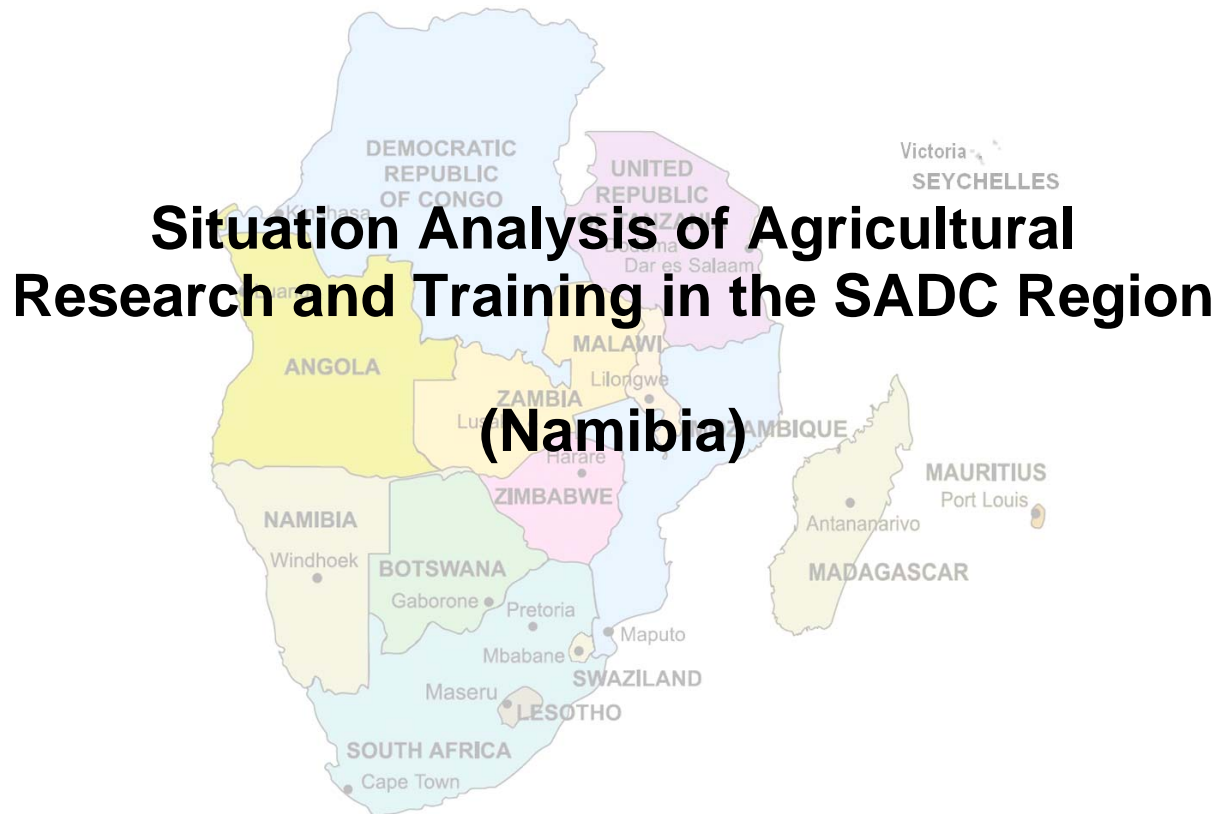




IMPLEMENTATION AND COORDINATION OF AGRICULTURAL RESEARCH AND TRAINING (ICART) IN THE SADC REGION



***FANR Directorate
SADC Secretariat
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UNIVERSITY OF NAMIBIA

Situation Analysis of Agricultural Research and Training, in order to assess and Formulate Support Strategies for the National Agricultural Research Systems and Agricultural Research Networks in the SADC Region

Namibia

Implementation and Coordination of Agricultural Research and Training in the SADC Region (ICART)

2008

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Acronyms

| | |
|----------|---|
| AGRIBANK | Agricultural Bank of Namibia |
| ARS | Agricultural Research Service |
| ATF | Agricultural Trade Forum |
| CBNRM | Community Based Natural Resource Management |
| CITES | Convention on International Trade in Endangered Species |
| DANIDA | Danish International Development Agency |
| DAT | Division Agricultural Training |
| DBN | Development Bank of Namibia |
| DRFN | Desert Research Foundation of Namibia |
| DRWS | Directorate of Rural Water Supply |
| DSS | Directorate of Scientific Services |
| EA | Environmental Assessment |
| EMBRAPA | Empresa Brasileira de Pesquisa Agropecuária |
| EU | European Union |
| FAO | Food and Agriculture Organization |
| FINNIDA | Finish Development Agency |
| GDP | Gross Domestic Product |
| GTZ | Deutsche Gesselshcart für Technische Zusammenarbeit |
| HIV/AIDS | Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome |

| | |
|-------|---|
| IPM | Integrated Pest Management |
| ICART | Implementation and Coordination of Agricultural Research and Training |
| JPC | Joint Presidential Commission |
| LMIC | Lower Middle Income Country |
| MAWF | Ministry of Agriculture, Water and Forestry |
| MCA | Millennium Challenge Account |
| MET | Ministry of Environment and Tourism |
| MOE | Ministry of Education |
| MOF | Ministry of Finance |
| NAU | Namibia Agricultural Union |
| NARS | National Agriculture Research System |
| NDP2 | National Development Program 2 |
| NNF | Namibia Nature Foundation |
| NNFU | Namibia National Farmers Union |
| NORAD | Norwegian Development Agency |
| SACAU | Southern African Confederation of Agricultural Unions |
| SADC | Southern African Development Community |
| SIDA | Swedish International Development |
| TESEF | Transformational Economic and Social Empowerment Framework |
| UNDP | United Nations Development Programme |
| UNAM | University of Namibia |
| USA | United States of America |

USAID United States Agency for International Development

1. Summary

This report aims to give an overview of the institutional arrangement, functions and linkages in agricultural research and training. Through internet, literature, flyers and interviews, the author obtained scanty and non-uniform information that led to the formulation of the report and acknowledge an omission of those institutions/organizations that did not want to take part in the exercise. The evaluation shows that the agricultural research and training has evolved into a multidisciplinary field of interdependent functions that need institutional rearrangement.

Agricultural Research and Training in Namibia is affected by the structure and linkage between organizations that carry this task. The bulk of the activity is classified as government and semi-government organization that takes more than 90% of the number of organizations involved. Through the Ministry of Agriculture, Water and Forestry, the Government formulated an umbrella policy called the National Agricultural Plan that form part of the National Development Plans and the Country's long-term Vision 2030. Recognizing the interdependence between agriculture and other sectors, and in particular, water, forestry, land, aquaculture, community base natural resource management and biodiversity conservation, the sector has expanded and now require multidisciplinary approach in which other role players influence the agriculture policy. The national education sector is under a separate ministry with directorates such as research and science technology, high education and Namibia qualification authority, the education and training in agriculture has expanded further into the Ministry of Education. Further indirect influences are experienced from the Ministry of Finance through the Agricultural Bank of Namibia and the Development Bank of Namibia that finance agribusiness and administer loans for agricultural development. Still within the Government, the Ministry of Lands, Ministry of Fisheries and Marine Resources and the Ministry of Environment and Tourism have policies and directorates that have direct bearing on the national agricultural research and training.

The majority of institutions that are actively involved in agricultural research and training are semi-government organizations. These include universities, agricultural boards and quality control institutions. These institutions were created by the Government to execute specific tasks of national interest and continue to survive from government funding. In addition to the direct research and training in agriculture, a number of projects are outsourced through consultancies to private organizations or individuals. Consultancy has become common practices for quick research results

and training of short courses in agriculture. This is to the expense of proper research and training that reach recognized publication in the form of books and journals.

Private sector dominates the agribusiness through retailing, marketing and exporting. However, farmers' organizations are mainly protecting the interest of farmers in policies and market forces. Of recent, farmers organizations have moved into training of farmers mainly for marketing and value addition to their produce. A few private organizations have recognized the interdependence of agriculture and natural resources and have taken this multifaceted integrative approach in research and training. Such organizations seek funds directly from international agencies and/or in partnership with other institutions for their survival.

The size of Namibia, aridity and her small population has resulted in high transport cost and low agricultural output. This negative economic efficiency has a bearing on the agricultural research and training more than elsewhere in the SADC region. The number of agriculturalist trained and get absorbed in the country's economy could not be obtained in this survey and so is the number of staff that were trained inside and outside the country. However, the number of staff in each institution (for institutions that provided information) is extremely low to carry out the functions mandated to each institution. That also calls for institutional rearrangements into a multidisciplinary system to share the burden.

With the exception of the Ministry of Agriculture, Water and Forestry, none of the institutions that provided information to this survey indicated their involvement in the National Agricultural Research System (NARS). From literature it appears that the NARS was formed in the early 1990s and operated with stakeholders in participatory forums for the development, dissemination and adoption of research projects in the country. This mandate faded into the Ministry as a custodian to take the center stage alone. Currently such forums are not distinct, partly because the new national policies are specific with respect to participation and each institution concentrates on its specific mandate. Institutional funding and finances has also contributed to the inactivity toward the NARS and this report is therefore appealing for the establishment of the National Agricultural Research Institute (NARI) that will formalize the alliances among research institutions in Namibia. Already at regional level there is a SADC Protocol on Education and Training that is unfortunately not known to many institution staffs of member States. A national network on training in agriculture and other sectors is to be appraised.

2. Background

Namibia is 825,418 km² in size with the climate generally described as desert, hot, and dry and the rainfall sparse and erratic. The rainfall pattern is highly variable between seasons, resulting in low biomass production of the land that confines agricultural activities to extensive livestock farming with opportunities for horticulture along the perennial rivers. The latter are frustratingly situated the northern and southern borders of the country and are all shared among neighboring countries. The topography is mostly high plateau reaching 2,606 m above sea level at maximum. The Namib Desert stretches along coast of the Atlantic Ocean and the Kalahari Desert captures most of the south and eastern borders of Namibia. The country's land use is divided as into *arable land* (1%), *permanent crops* (0%), *permanent pastures* (46%), *forests and woodland* (22%) and *other* (31%). The most common natural hazard is prolonged periods of drought while occasionally floods, diseases and wild fires threaten the lives of people and livestock, particularly in the northern strip where the rainfall is higher.

Namibia's population was estimated at 1.83 million in 2001, growing at a rate of 2.6% per annum over the ten year period. The population is more concentrated in the northern areas along the perennial rivers, in the central area around the capital Windhoek and at the coastal towns in the west. The country is classified as "lower middle income country" (LMIC) with a high annual GDP per capita of about US\$2,843, an average that hides considerable disparities and denies her an opportunity to be a priority for international assistance.

The agriculture sector continues to be highly susceptible to drought, floods, pest and disease, inefficient subsidies and high production costs. It contributed 8.4% to GDP in 2000, but has declined to 6.4%. The sector is a major source of income and employment (49% of the labour force) for the bulk of the population comprises two distinct subsectors – the commercial and subsistence subsectors. Commercial farming is dominated by livestock ranching - cattle in the north-central districts, sheep (karakul and mutton) and ostriches in the south, which account for 80% of total agricultural output. Livestock ranching usually contributes well over two-thirds of commercial farming output, but is very vulnerable to drought. Communal farming is mainly rain-fed farming in the northern regions and subsistence livestock farming in the central to south.

Production is oriented towards food crops (maize and millet), while livestock are produced mainly for local consumption. Due to overgrazing and environmental factors, yields in the north remain low on average.

There is a marked disparity in land access between the mainly white 4,000 commercial farmers who own some 37% of the arable land, and the subsistence farmers (some 70% of the population) who are partly dependent on agriculture for their livelihood and most of whom live or work on communal farm-land, owned by the state. The Commercial Land Reform Act of 1995 and Communal Land Reform Act of 2002 are mainly meant to address this disparity and develop the communal land.

3. Methodology

Following the Consultative Meeting in Johannesburg in October 2007

Theme 1: Framework and coordination of the NARS

1. Identify relevant Ministries and policies for Agric Research and Training
2. Identify relevant private sector organizations, their research needs and their role in Research and Training.
3. Establish the list of registered institutions/organizations delivering agricultural research
4. Establish the list of registered Institutions/organizations delivering high level training and in-service professional training in Agriculture.
5. Assess with the Ministries the formal existence of NARS and the monitoring mechanisms, the contribution of research stakeholders
6. Provide charts indicating institutional structures and relationships
10. Document the working methodology (how do we fund, identify priorities, establish collaboration)
16. Identify actual and potential demand for cooperative relationships between research and training institutions and farmers' organizations and private sector
17. Document and Appraise in country research alliances

Action: Consultants to provide Theme 1 to be written out into the draft form for presentation to the workshop.

A Work plan was then proposed as follows:

- a. Formulate and finalize contract for signature (12 -15 November 2007)
- b. Disseminate information and form a team (08-15 November 2007)
- c. Brief the Focal Point on the development (08-09 November)

Resolution: A smaller and financially manageable group of resource persons rather than a workshop shall be welcomed. National Focal Point shall be the chair person of the meeting and the consultant shall focus on the facilitating and reporting of the meeting.

1. Complete report draft (Mid December 12 – 19 December)
2. Send to Focal Point and stakeholder (End December 30 – 31 December)
3. Stakeholder meeting (Mid January 12-15 January 2008)
4. Report to SADC (End January 28-30)

The work plan was tarnished by the timing of the activities in December and January. This concern was raised several times, but eventually a new due date was set for September 2008. In the mean time the finances and constitution of the team changed drastically due to other commitments.

The following Questionnaire was drafted and sent to institutions country wide.

| |
|---|
| <p>Critical Questionnaire (Should be assisted with proper documentation where necessary)</p> |
|---|

- | |
|---|
| <ol style="list-style-type: none"> 1. Name of organization/Institution 2. Type: Private/parastatal/public 3. Year established 4. Mission/Vision 5. Objectives (optional) 6. Institutional Structure (executive and departments/sections) 7. Working relationships with other stakeholder (which organizations?) 8. Type of relationship (affiliation, association, communication, collaboration, coordination) – see definitions below. 9. Research Needs (can be as elaborate or provide support documentations) 10. Training Needs (can be as elaborate or provide support documentations) 11. Priorities for funding (rank high to low) 12. How should SADC fund (i.e. staff exchange, formal programs, short courses, equipment, material etc.)? 13. Willing to further collaborate with stakeholders in the region? |
|---|

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| <p>[Definition of relationships: (1) Affiliation: attached or connected with a larger organization; (2) Association or Cooperation: In partnership with other organization; (3) Communication: The practice of exchanging information between organizations through meetings or reports; (4) Collaboration: working jointly through forums or committees; (5) Coordination: various organizations with equal status working together]</p> |
|--|

Institutions and Departments were reluctant to the respond partly because:

- a. security reasons,
- b. complaining of too much unwarranted work
- c. Not seeing direct benefits
- d. Not having time
- e. Simply not a priority for them
- f. Not interested

The working team then resorted to libraries, internet, local news and individual staff within institutions who were willing to answer on their sections of their work spheres. The report was then compiled using this patchy pool of information.

4. Focus of Agricultural Development in Namibia

There are three National goals that guide the Namibia national agricultural development, namely:

1. The long term Vision 2030
2. Millennium Challenge Account (or Millennium goals)
3. Short term National Development Plan (NDP) – currently at the end of NDP2

The country's agricultural research and training follows the goals set in these three policy documents. The challenges and goals are outlined as follows:

4.1 Namibia's Vision 2030

Namibia agricultural production is based on the improvement of the following sectors:

1. Land tenure system: peoples' rights , responsibilities and authority over land and natural resources
2. Achieving sustainability in the land and agricultural sectors, and the need for diversified livelihood
3. Promoting sustainability of the forestry sector – timber and non-timber forest products;
4. Sustaining the coastal and marine fisheries and ecosystems;
5. Wildlife and tourism – optimizing Namibia's comparative advantage; and
6. Mining – harvesting the earth's bounty with minimal impacts

4.1.1 Land distribution and Tenure

Between 60 to 70 % of Namibia's population practice subsistence agro-pastoralism on communal land, which is state owned, and constitutes approximately 41 % of the total land area.

Less than 10 % of the people live in the freehold farming area. This is privately owned land constitutes approximately 44 % of the total land area.

About 1.5 % of the total land area is comprised of exclusive diamond concession area.

About 13.5 % has been proclaimed as nature conservation area.

On average freehold agriculture contributes less than 4 % to the GDP (including meat processing) and 27 % of exports. Since the 1970's, many freehold livestock farmers have moved towards mixed game/livestock farming. This diversification helps to create a valuable buffer against drought.

Agriculture in the communal areas is vital for the livelihood of most rural households. Distant market limit the development of farming in the communal areas, and agricultural incomes are low and variable. Veterinary fences that prevent the spread of contagious livestock diseases have limited the export market opportunities of communal farmers.

Not all farmers in Namibia can be defined as 'serious'. There are many absentee farmers who own freehold land, and illegal fencing of prime areas of supposedly communal land by wealthy individuals has become common.

4.1.2 Land degradation – threatening future agricultural output

Land degradation reduces the production potential of the land. It occurs when there is a decline in plant cover or when one type of vegetation is replaced with other, often less productive, species.

Namibia's arid savannah systems, and dry woodland areas that have reverted to savannah-type systems as a result of extensive deforestation, are the most susceptible to land degradation.

The environmental manifestations of land degradation in Namibia – soil erosion, bush encroachment and soil salination – are causes of economic loss and escalating poverty, through declining agricultural production and a loss of food security. This leads to human migration, rapid urbanization and an increased need for the government to import food.

Land degradation is usually attributed to overgrazing, land clearing for crop farming or inappropriate cultivation techniques. Ultimately, however, desertification occurs as a result of incorrect policies, incentives and regulations that encourage inappropriate land management practices.

The lack of tenure, the inequitable access to land and a lack of integrated planning are all important factors contributing to land degradation in Namibia.

4.2 The Millennium Challenge Account (MCA) Namibia Program

Aims

1. To improve human resources capacity and skills, empowering the Namibian workforce to become more competent (knowledge, skills and attitude).
2. To increase productivity of (on-farm and off-farm) enterprises in rural areas

In order to increase the productivity, Namibia outlined a series of actions on agricultural production and development as priorities in the MCA Investment 2 that translate into increased production of large and small stock and mainstream the commercial marketing thereof in communal areas and on resettlement farms.

Improve animal health and quality through the construction/expansion of Veterinary Stations & tagging of animals.

Increase large and small stock production by:

- a. Unlock Eiseb Block (i.e. bring the Block to the mainstream of livestock market).
- b. Clearing of bush-encroached farmland through Bush-to-Energy (BTE)
- c. Upscale Emerging Commercial Farmers Support Program (ECF-SP)

Improve marketing infrastructure by:

- a. Moving of Veterinary Cordon Fence to Namibian-Angolan border
- b. Improvement of animal health in the Caprivi Region
- c. Upgrading of existing quarantine facilities.
- d. Establishment of feedlots at Etunda, Rundu and Katima Mulilo

4.3 National Development Plan 2 (NDP2)

Among the many strategies that Namibia has taken to address the sustainability of the agricultural sector here are some where research and training will have major impacts:

1. Creating economically and ecologically rational land-use plans to ensure that land is used optimally.
2. Encouraging local value-adding through domestic processing of meat products

3. Implementing policies that discourage the use of wood fuel and help combat climate change.
4. Focusing on food security and not food self-sufficiency.
5. Improving the quality of education and environmental education.
6. Ensuring that all new projects, programmes and policies do not proceed without a thorough Environmental Assessment (EA).
7. Rehabilitating degraded land and water bodies.
8. Providing incentives for family planning and education services combined with appropriate and diversified land-use options.
9. Recognizing the interdependence between agriculture and other issues, and in particular, water management and biodiversity conservation.
10. Providing appropriate, effective, decentralized and integrated support services (extension, research, education, credit, marketing, etc.).
11. Developing effective and sustainable uses of land and natural resources which do not threaten their future productivity, by:
 - a. Adopting more adaptive and responsive agricultural methods e.g. replacing a monoculture of food and cash crops with viable intercropping systems, crop rotation and agroforestry.
 - b. Ensuring that irrigated land is well drained, practicing night-time irrigation and leaving land fallow for part of the year in order to reduce the chances of soil salinisation.
 - c. Adopting integrated pest management (IPM) in an attempt to reverse the trend of sizing pesticide use, which threatens human health and Namibia's comparative advantages in the global fish and meat markets.
 - d. Maintain the genetic integrity of Sanga cattle and other indigenous livestock and crop gene pools.
 - e. Encouraging research, development and testing of new CO² responsive heat and drought resistant crop cultivars (in preparation for future climates that could become hotter and drier). Identify cost-effective, flexible, and adaptable management approaches and national disaster response strategies to the potential impacts of Climate Change that could affect the livelihoods of Namibia's rural poor.

5. Identify relevant Ministries and policies for Agric Research and Training

When government is rearranging and reorienting its structures to meet new challenges, policies and functions of each affected ministry changes. As a young country, Namibia is no exception to these changes. After independence in 1990, the Directorate of Agricultural Development, Division of Agricultural Investigation was transformed and renamed into the Directorate of Research and Training with the Divisions of Livestock Production, Division Crop Production and Division Agricultural Training. In the mid 1990s the Mashare College and the Tsumis College were reorganized into development institutes of research, rural development and community training centers, leaving Neudamm and Ogongo Colleges solely for agricultural training purposes. In the last two years the functions of the Division of Agricultural Training was again reoriented due to the transfer of the Neudamm Agricultural College and the Ogongo Agricultural College to the Ministry of Education and eventually to the University of Namibia's Faculty of Agriculture and Natural Resources.

Agricultural Research has not change drastically since independence, except for the reorientations of its goals from commercial land to communal land. This has created and strengthened research stations in the communal land, particularly in the northern communal area where crop production and crop breeding became a priority.

With the formulation of new policies at national level, sectoral training and research in various ministries and private sectors were created independently. Currently, the interdependency of policies and institutional structures is yet to be defined and appraised. Table 1 shows the sectoral structures in the public sectors and their respective policies that directly or indirectly influence the operations of agricultural training in Namibia.

Table 1. Government policies that directly and indirectly govern the Agricultural Development:

| Ministry | Policy |
|---------------------------------|--|
| Agriculture, Water and Forestry | Custodian National Agricultural Policy of 1995 Namibia Water Cooperation Act of 1997 Namibia Water Resources Management Review of 1998 Water and Sanitation Policy National Drought Policy and Strategy Co-operative Act of 1996 |

| | |
|--|--|
| | Poverty Strategy Meat Board Act Agronomic Board Act Forestry Strategic Plan of 1996 Development Forestry Policy for Namibia 2001 |
| Ministry of Lands and Resettlement | Commercial Land Reform Act of 1995 National Resettlement Policy of 1995 National Land Policy of 1998 Communal Land Reform Act of 2002 |
| Ministry of Environment and Tourism | Namibia Nature Foundation Nature Conservation Ordinance of 1975 Nature Conservation Amendment Act of 1996 Conservancy Act |
| Ministry of Education | University of Namibia Act Polytechnic Act of 1994 National Qualification Authority Act of 1996 |
| Ministry of Fisheries and Marine Resources | White Paper on Inland Fisheries Policy of 1997 Aquaculture White Paper |
| Ministry of Trade and Industry | Namibia Development Cooperation Act National Policy and Programme for Small and Medium Enterprise Development of 1997 Foreign Investment Act |
| Ministry of Finance | Agricultural Bank Act of 1944 |
| National Planning Commission | Poverty Reduction Strategy Population Statistics |
| Office of Prime Minister | Transformational Economic and Social Empowerment Framework (TESEF) of 2006 Emergency Management Unit The Namibian San Community Project |
| Ministry of Youth, National Service, Sport and Culture | National Youth Service Scheme |

5.1 Ministry of Agriculture, Water and Forestry

Agricultural Research and Training in Namibia is in the custody of the Ministry of Agriculture, Water and Forestry at Government level. This Ministry has two departments that are made up of eight directorates as follows:

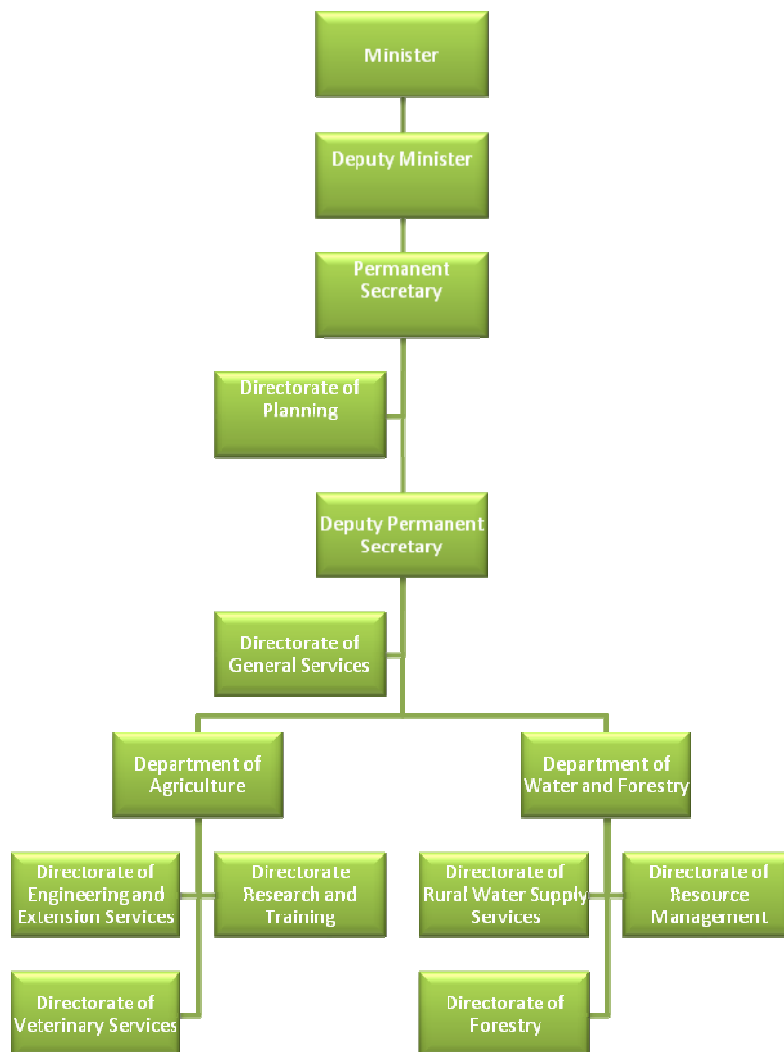


Figure 1. Management structure of the Ministry of Agriculture, Water and Forestry

The Ministry of Agriculture, Water and Forestry manages and utilizes water and agricultural resources to achieve sound socio-economic development. The ministry adopted the following objectives:

1. To facilitate the empowerment of communities to manage their agricultural resources in a sustainable way;
2. To ensure progressive improvement in households food security and nutrition;
3. To ensure access to reliable water supply of an appropriate standard for households and other economic uses;

4. To continuously improve the capacity of the ministry to best serve its customers efficiently and in a cost effective manner;
5. To assist and advise on the land reform process; and
6. To improve agricultural income.

5.1.1 Directorate of Research and Training

As a custodian of Agricultural Research and Training, this Directorate aims to facilitate the development and management of MAWF human resources at all levels and in all disciplines, and to undertake well-balanced crop, livestock and natural resource research within the communal and commercial sectors, contributing to increased productivity and sustainable utilisation of natural resources under arid, semi-arid and sub-humid condition, thereby improving the living standards of the Namibian population.

The Directorate's main objectives are to:

- facilitate and co-ordinate the development and management of all MAWF human resources to meet strategic and business objectives;
- support the non-formal training of farmers and farm labourers and facilitate the transfer of agricultural training to the established Namibian University College of Agriculture;
- improve the management of research plans, programmes and projects at all levels;
- implement research agendas and priorities in line with the needs and demands of both communal and commercial farmers;
- render specialized services of acceptable quality to external and internal customers; and
- facilitate access to information and appropriate technology for all stakeholders and customers

The Directorate of Research and Training consist of the Division Plant Production, Division of Livestock Production and the Division of Training. The Division of Agricultural Training aims to support the development of human resources required for the sustainable development of the agricultural sector in Namibia at all levels and in all disciplines. The division has the following objectives:

- To provide support to line Directorates within the Ministry of Agriculture, Water and Forestry to improve the managerial, professional and technical skills and competence of their staff in delivering the results needed to achieve their aims and objectives.
- To support the training of farmers (communal, emerging commercial and re-settled) and their laborers.
- To support the training of those small-scale irrigation-farmers trainees who are likely to participate in the Green Scheme
- To support the provision of adequate, well-trained human resources in line with the existing and future needs of the agriculture and water departments.
- To promote agricultural and water education of school children at secondary schools.
- To ensure that enough well trained and committed staff within the Division: Agricultural Training are in place and able to meet the training responsibilities of MAWF, competently.

The Ministry has in total 1200 positions at professional and technical level. Some of these positions are vacant and will be field as the resources allow and the staffs on study return.

Table 2. Number of staff in the Ministry of Agriculture, Water and Forestry as professionals and technicians

| Directorate | Professional and Technical Posts |
|------------------------------------|----------------------------------|
| Extension and Engineering Services | 240 |
| Veterinary Services | 121 |
| Agricultural Research and Training | 160 |
| Forestry | 64 |
| Other directorates | 615 |
| Total | 1200 |

Includes Plant Pathologist, Agronomists, Horticulturalist, Foresters, Soil Chemist/Analyst/Taxonomist, Plant Breeder, Data Analyst, Animal Breeder, Animal Health Specialists, Animal Nutritionist, Zoologist, Botanists, Range Ecologists, and Extensionists

5.1.2. Directorate Engineering and Extension Services

Extension and Engineering Services exists to promote the adoption of improved agricultural technologies and practices in order to increase agricultural production, empower farmers and facilitate sustainable improvement in living conditions of rural communities. The directorate has the following objectives:

- To provide agricultural extension in the form of communication, advisory and training services.
- To contribute to the implementation of an effective drought preparedness planning and responsive drought management system
- To establish a mechanism to regulate and manage irrigation on a national basis
- To improve the legal environment in order to improve farming production.

The Division Agricultural Extension has Agricultural Extension Officers and Technicians situated in all the regions country wide. This division also assists in on-farm research trials and train farmers on adaptive technology and government programs.

5.1.3 Directorate of Veterinary Services (DVS)

The mission of the Directorate of Veterinary Services (DVS) is to maintain and promote animal health, production and reproduction, and to assure safe and orderly marketing of animals and animal products through animal disease control, import control, veterinary surveillance, epidemiology and extension, diagnostic services and veterinary public health services.

The main objective of the DVS is to maintain and promote optimal animal health and production and to ensure access of Namibian animals and animals products to regional and international markets.

The Central Veterinary Laboratory in Windhoek has professional veterinary staffs that provide an essential back-up service to field diagnosticians, by testing a wide variety of samples for diseases with of sophisticated laboratory equipment. Epidemiological data is gathered from the laboratories, the export abattoirs and from all field services concerning stock numbers, disease incidence and various other aspects on data collection forms filled in by veterinarians and animal health

auxiliaries to be stored in the central databank. Problem oriented veterinary research is undertaken as required on affected farms and at Bergvlug Quarantine Station.

5.1.4 Department of Water and Forestry

The Department of Water Affairs is made up of three directorates: the Directorate of Resource Management, the Directorate of Rural Water Supply and the Directorate of Forestry. Several specialist divisions undertake the functions and objectives of the department. The Namibia Water Corporation is the only semi-government company associated with the department and is responsible for bulk water supply.

Directorate of Resource Management is charged with the following objectives and functions:

1. To assist the Government in the overall management of the national water resources;
2. To remain the guardian over the water resources of Namibia;
3. Assume responsibility for and implement measures to ensure the protection and sustainable utilization of the water resources of the country;
4. Control water abstraction and decide on the equitable allocation of water resources;
5. Be responsible for the regulation, planning and control of the water sector.

The Directorate of Rural Water Supply (DRWS) is charged with the task of supplying clean water to the communal areas of Namibia.

The Directorate of Forestry has a mission to practice and promote the sustainable and participatory management of forest resources and other woody vegetation, to enhance economic development and environmental stability. The aim is to:

1. Reconcile rural development with biodiversity conservation by empowering farmers and local communities to manage forest resources on sustainable basis.
2. Increase the yield of benefits of the national woodlands through research and development, application of silvicultural practices, protection and promotion of requisite economic support projects.

3. Create favourable conditions to attract investment in small and medium industry based on wood and non-wood forest raw materials.
4. Implement innovative land-use strategies including multiple use conservation areas, protected areas, agro-forestry and a variety of other approaches designed to yield forestry global benefits.

5.2 Ministry of Education (MOE)

In its mission, the Ministry of Education is committed to providing all Namibian residents with equitable access to quality education programmes, to develop the abilities of individuals, to acquire the knowledge, understanding, skills, values and attitudes required throughout their lifetimes. The Ministry has three Departments, namely, Department of School and Formal Education, Department of Policy and Administration, Department of Lifelong Learning and the Department of Tertiary Education, Science and Technology. The latter consist of the Directorate of Higher Education, Directorate of Science and Technology and the Directorate of the Namibia National Commission for UNESCO.

Under the Ministry of Education are two tertiary education institutions as semi-government or parastatals, namely the University of Namibia and the Polytechnic of Namibia. (See private sector training section).

The Ministry of Education also offers policies and standards of education in the country and two important policies are the National Education Charter and the Education Act. These documents provide a milestone to realize the education and training needs of the country and correct the past disparity created by the past apartheid regime.

With the recent transfer of Agricultural Colleges to the University of Namibia, the core function of the Ministry in agricultural training is left with financial assistance through the Namibia Student Financial Assistance Fund (NSFAF) as follows:

The Ministry of Education established a loan scheme in 1997 to assist students from disadvantaged backgrounds. The Namibia Student Financial Assistance Fund (NSFAF) was created to replace the Public Service bursary scheme whose purpose was to train people to work solely in the public service. The loans are awarded to students who are orphans, those who are studying fields of high priority and those whose parents cannot afford to pay for their studies. The loans are awarded to

students whose parents' combined income is N\$ 150 000 and less, before deductions.

Fields of priority for NSFAP:

1. Teacher education majoring in Mathematics and Science, English and Computer Science.
2. Medical and related sciences
3. Agriculture and Veterinary science
4. Natural Science, Computer Technology and Information Technology
5. Engineering and related fields, including Energy, Mining and Architecture.
6. Communication, Conservation, Tourism, Hospitality and Information Science, including teacher education in these fields.
7. Law
8. Economics, Commerce and Accounting, including teacher education in these fields.
9. Police and strategic studies.
10. Public Administration and Personnel Management.
11. Humanities, Social Work and Nursing, including teacher education in these fields.
12. Culture, Sport and Art, including teacher education in these fields.

The loan only covers for tuition fees. The NSFAP cannot cover for accommodation, because it wants to assist as many students as possible. The NSFAP receives more than 17 000 applications each year, but can only assist less than 4000 students each year. To date, the NSFAP has assisted close to 22 000 students since 1997 to the tune of close to N\$ 400 million in total. The figures for agricultural students alone are not known.

5.3 Ministry of Lands and Resettlement (MLR)

The Ministry of Lands and Resettlement was established in 1990 as the main actor in the planning and administration of land. It was entrusted with the responsibility of rendering services to eradicate the vast disparities in respect of land distribution, social reintegration, and rehabilitation of people with disabilities and resettlement of disadvantaged Namibians.

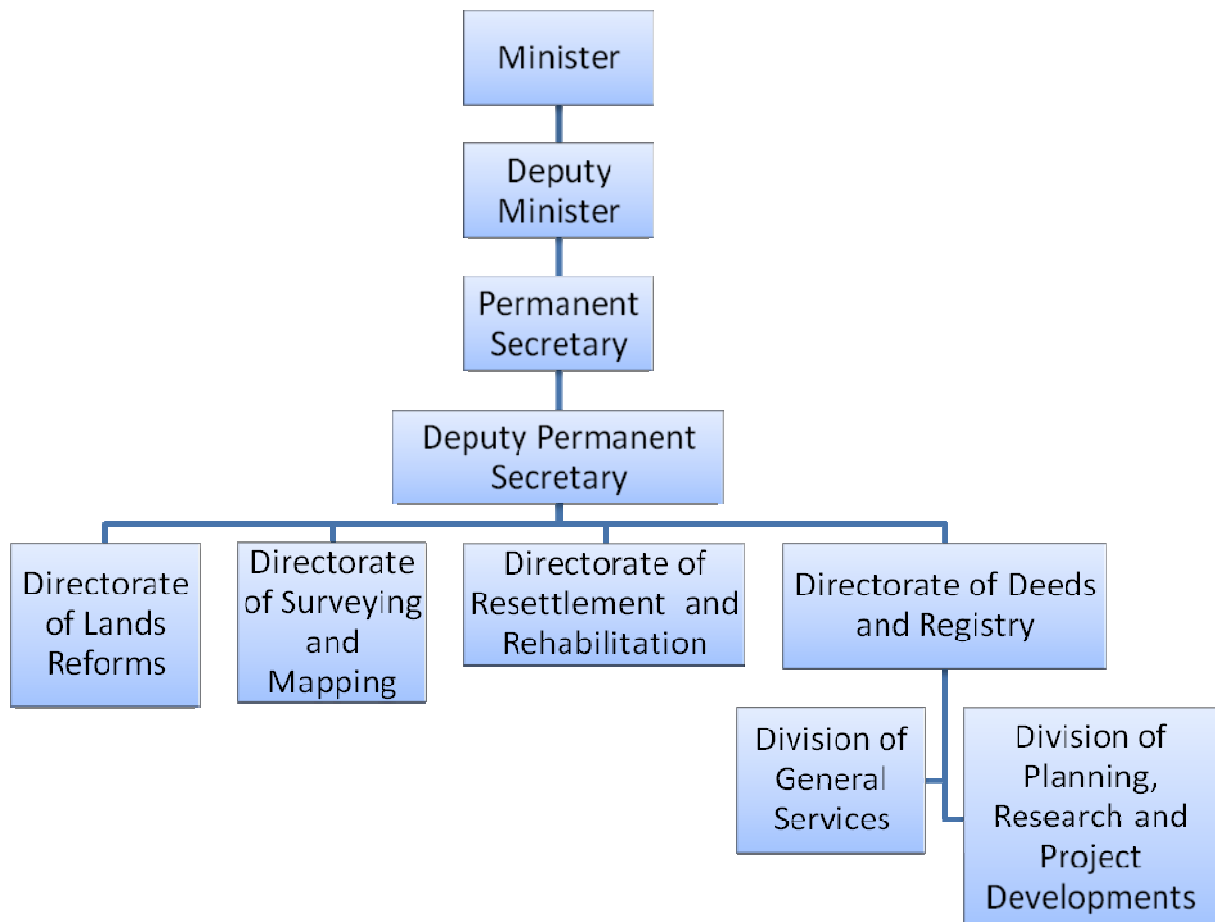


Figure 2. Organogram of the Ministry of Lands and Resettlement

Vision of the MRL is to be a meaningful contributor to the goals of NDP2 and Vision 2030 by ensuring that Namibia's land resources are allocated equitably, managed efficiently, and used responsibly for the benefit of all Namibians, now and in the future.

Mission of MLR is to prudently administer Namibia's land policy by pursuing reforms that facilitate affordable access of all citizens to land and services for the responsible exploitation, efficient use, shared and sustainable benefits of all Namibian land stakeholders.

The functions of the Ministry of Lands and Resettlement are as follows:

1. Resettlement management
2. Management and Control of Communal Lands
3. Land Use Planning and Assessment

4. Deeds Examination
5. Valuation
6. Survey and Mapping

5.3.1 Directorate of Land Reform

The Directorate of Land Reform consists of two main divisions, namely, the Division of Land Boards, Tenure and Advice, and the Division of Land Use Planning and Allocation, and one unit, *viz.*, the Valuation and Estate Management Unit. The main function of the directorate is to administer the Agricultural (Commercial) Land Reform Act No. 6 of 1995 and the Communal Land Reform Act of 2002. The objectives of the directorate are:

1. To acquire land for resettlement and developmental purposes.
2. To guide the formulation of rural land development plans to ensure optimum beneficial use of scarce and fragile natural resources.
3. To prepare plans for specific land use options and to co-ordinate future land use planning in the country.
4. To allocate communal land for farming and business purposes.
5. To determine land value and other government properties for various uses.
6. To protect the inalienable right of every citizen to have access to land.
7. To collect and keep baseline data on natural resources.

The Division of Land Use Planning and Allocation is mainly responsible for developing land use plans for commercial and communal land. The division is also mandated to execute the following functions:

1. Assessment and acquisition of land/farms for resettlement purposes.
2. Collection of baseline data on biophysical and socio-economic environment with the aim of evaluating suitability of land for specific uses under certain levels of management.
3. Demarcation of farms into farming units as stipulated in the Commercial (Agricultural) Land Reform Act, Act 6 of 1995.
4. Assist and support decision-makers at local, regional and national levels, in all aspects of sustainable use of land as a natural resource for development.

5. Testing of land utilisation against overall development objectives, policies, and appropriateness for implementation of land reform programs.
6. Providing guidelines for the drafting of legislation on land tenure and land administration and land use planning.

5.3.2 Valuation and Estate Management Unit

In accordance with the Cabinet decision to establish a centralised government unit on valuation and estate management, the ministry is in the process of establishing a unit for valuation and estate management in the Directorate of Land Reform. The main objectives of this unit would be:

1. Valuing commercial agricultural land/properties offered to the government for sale.
2. Providing professional advice on valuation to ministries, government agencies parastatals.
3. Implementing land tax, developing and maintaining an asset register.
4. Valuation for stamp duty and transfer duty, and developing estate plan.
5. Valuation for disposal/lease of state properties, e.g., farms.

5.3.3 Directorate of Survey and Mapping

The Directorate of Survey and Mapping consists of three divisions, namely, the Division of Mapping and Geographical Information System, the Division of Cadastral and Geodetic Surveys and the Division of Planning, Marketing and Administration. The directorate is the national survey and mapping authority in Namibia providing professional services and advice to the government, parastatals, private companies and the general public on all matters related to surveying and mapping. Its role is defined under the Land Survey Act, No 33 of 1993. The objectives of the directorate are as follows:

1. Examination and approval of cadastral survey records, diagrams and general plans.
2. Digitising and revision of topographical maps.
3. Creation of digital cadastral database.
4. Acquisition of up to date aerial photography.
5. Capacity building within the MLRR.

5.3.4 Directorate of Resettlement and Rehabilitation

The Directorate of Resettlement and Rehabilitation consists of two divisions, namely, the Division of Resettlement, and the Division of Rehabilitation. The directorate is responsible for resettlement of landless and displaced Namibians to enable them to attain an acceptable level of social and economic development. It is also responsible for developing and maintaining the capacity for creating both awareness and economic means, within Namibia, for people with disabilities to become integrated into the mainstream of Namibian society. This enables them to afford and utilise all means of education, development and employment available to other Namibian citizens.

5.3.5 Directorate of Deeds Registry

The Directorate of Deeds Registry provides professional services and advice to line ministries, parastatals, local authorities, legal practitioners and the general public on all matters relating to the registration of immovable and movable properties. The directorate has two divisions, namely the Division of General Services and Division of Planning, Research and Projects Development.

The Division of Planning, Research and Projects Development is one of the newly- established divisions within the ministry. The major responsibilities of the division are:

1. To set priorities for the ministry in the light of competing and highly demanding group and individual situations.
2. Mapping out new vision for the ministry by linking research study results with planned development programme.
3. Setting targets for the various directorates of the ministry and reviewing them.
4. Monitoring and evaluating developmental projects and programmes undertaken by the ministry.
5. Ensuring up-to-date and smooth linkages with all stakeholders that the ministry is expected to collaborate with at national, regional and local levels.
6. Ensuring that annual reports and newsletter are produced and distributed to the wider community.

5.4 Ministry of Environment and Tourism

The Ministry has five directorates

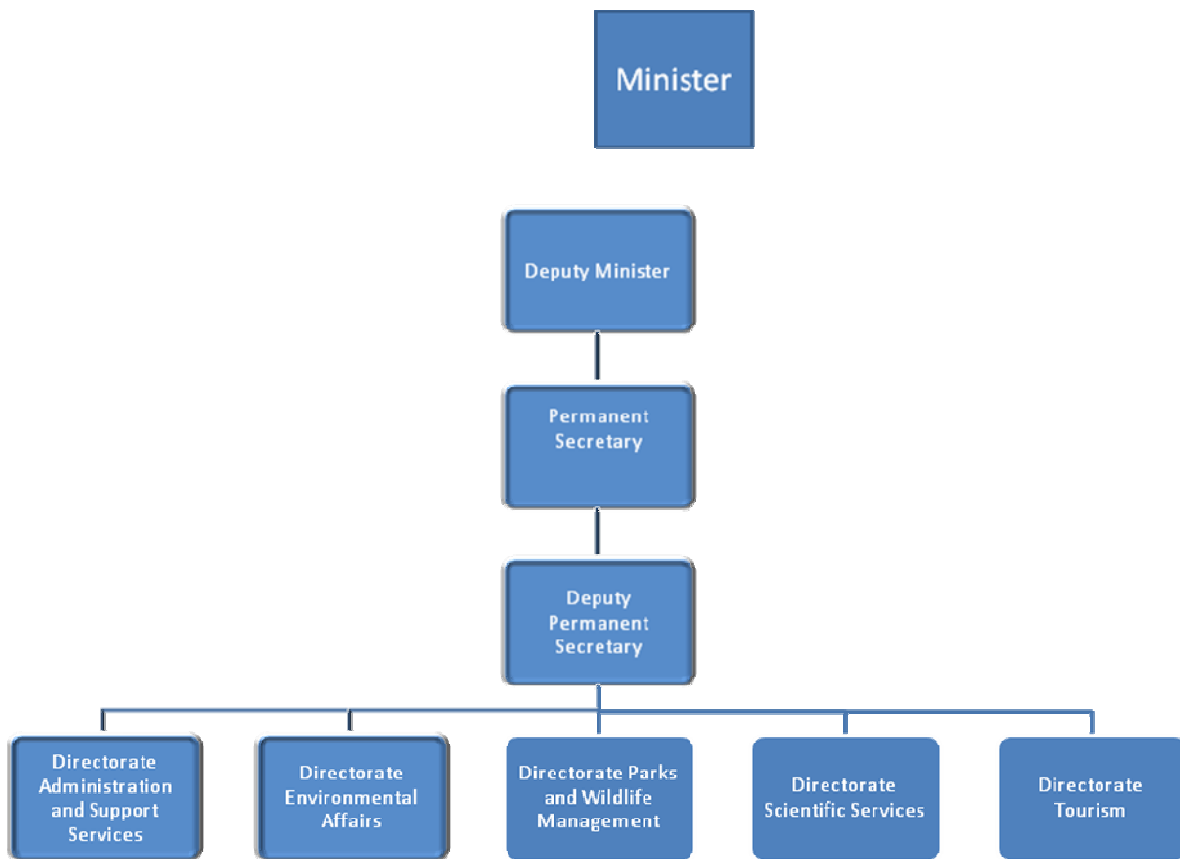


Figure 3. Organogram of the Ministry of Environment and Tourism

5.4.1 Directorate of Scientific Services

To promote the maintenance and rehabilitation of essential ecological processes, life support systems and biological diversity, and the sustainable utilization of natural resources, by providing a scientific basis for an informed decision making process.

As its name implies, DSS is the scientific branch of the Ministry of Environment and Tourism and as such strives to support the decision making process which underlies the fulfillment of the Ministry's mission – "to maintain and rehabilitate essential ecological processes and life-support systems, to conserve biological diversity and to ensure that the utilization of natural resources is sustainable

for the benefit of all Namibians, both present and future, as well as for the international community". DSS was established in 2000 to provide an institutional home for essential scientific services within the Ministry of Environment and Tourism. It is a versatile institution staffed by scientists drawn from a wide range of disciplines. Its purpose is to provide technical information and support for conservation and resource management programs throughout Namibia, through:

- Conducting and coordinating scientific wildlife research and monitoring.
- Providing specialist technical and scientific advice regarding conservation and resource management issues.

5.5 Ministry of Fisheries and Marine Resources

Its mission is to strengthen Namibia's position as a leading fishing nation and contribute towards the achievement of economic, social and conservation goals for the benefit of all Namibians. The objectives are:

4. Promote and regulate the optimal sustainable utilisation of living marine resources within the context of conserving marine ecosystems.
5. Establish a conducive environment in which the fishing industry can prosper and derive optimal income from marine resources.
6. To further Namibia's interest within the international fishing sector.
7. To provide professional, responsive and customer focused services.
8. Deliver our services efficiently and effectively providing best value for money.
9. Continuously invest in human resource development.

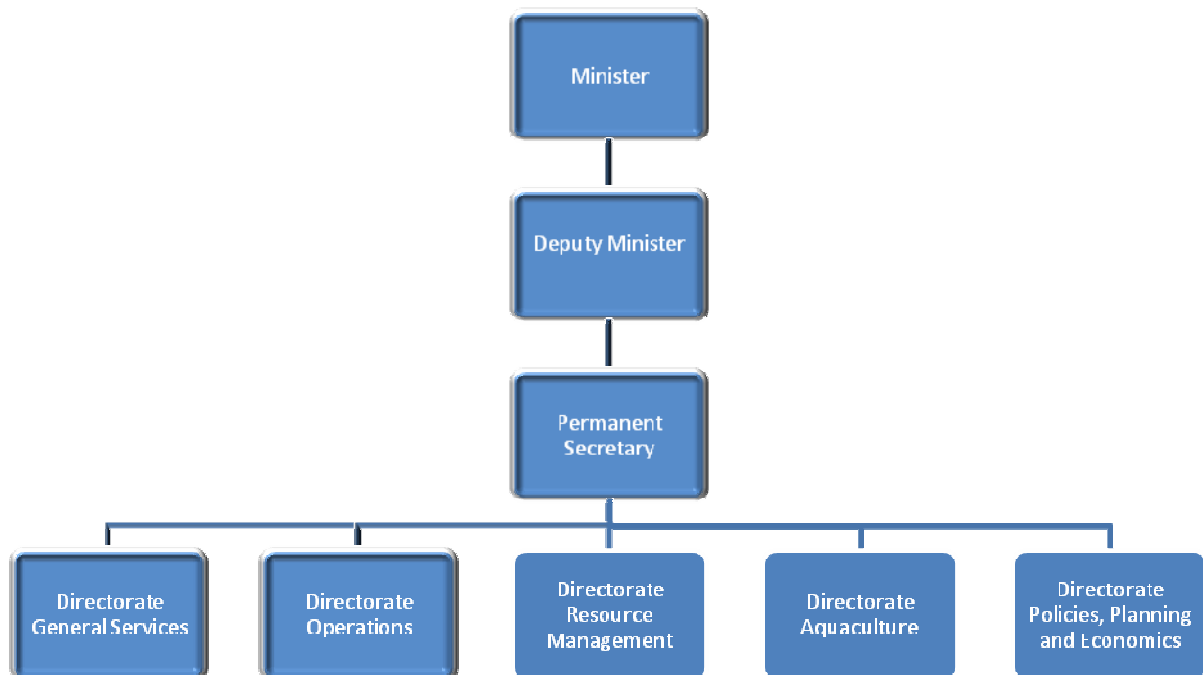


Figure 4. Organogram of the Ministry of Fisheries and Marine Resources

5.5.1 Aquaculture

The Directorate of aquaculture was established in 2003. There is legal frame work in place namely: Aquaculture policy published in 2001, Aquaculture Act published in 2002 and Aquaculture Strategic Plan approved in Parliament in 2004. This is to ensure that the sector is managed sustainably.

Aquaculture is the cultivation of aquatic animals, such as fish or shellfish, or of plants, such as seaweed, in a controlled and sometimes enclosed body of water. The term includes use of either salt or fresh water. It is a form of agriculture, but under water, also called Mariculture in Namibia. The commercial mariculture industry in Namibia is dominated by oyster production in the Swakopmund, Walvis Bay and Luderitz area. Other species produced includes abalone and seaweed. Freshwater Aquaculture in Namibia Freshwater aquaculture in Namibia is practiced to enhance food security by facilitating the provision of fingerling production to rural communities for fish farming. Freshwater aquaculture production in Namibia is dominated by Tilapia and Catfish fish species.

The Ministry has two approaches toward research and training that empowers the sector, namely *Namibianisation* and *Advancement of socially or educationally disadvantaged persons*

To be able to take up opportunities provided by development of the fisheries sector, Namibians must be able to acquire skills through training. In addition, to increase the role which Namibian businesses play in the sector, supporting policies and programmes are needed for the allocation of fishing rights and quotas. This goal will be achieved by strengthening the research and training capacities of the fishing industry.

To ensure greater beneficial participation in the sector for Namibians coming from groups previously subject to discriminatory laws and practices. This will be achieved through affirmative action.

6. Identify relevant private sector organizations, their research needs and their role in Research and Training.

The needs are emphasized in the Sections 4 and 11. The following institutions make up the bulk of research and consultancy from semi-government and private sector:

6.1 The Namibian Agronomic Board

The Namibian Agronomic Board is a statutory body constituted on 1 April 1985 in terms of the Agronomic Industry Proclamation, AG11 and AG12 of 1985, which was replaced by the Agronomic Industry Act (Act 20 of 1992).

In terms of this Act, fourteen Board members are appointed by the Minister of the Ministry of Agriculture, Water and Forestry (MAWF) from various sectors of the agronomic industry and from government.

The vision of the Namibian Agronomic Board is to be a leading promoter of a vibrant agronomic industry. The mission is to develop and promote a sustainable and diverse agronomic industry through management, facilitation, advice and regulation.

6.2 The Meat Board of Namibia

The Meat Board of Namibia, founded in 1935, facilitates the export of livestock, meat and processed meat products to importing countries. All major stakeholders of the Namibian meat industry are represented on the Board. It is adequately equipped to assist the meat and livestock trade with relevant information, technical and administrative support.

The Meat Board of Namibia achieves a dynamic partnership between the Namibian meat industry and its customers. Key objectives are to continue developing strong markets and matching consumer requirements with supplier capabilities.

The vision of the Meat Board is to become a world-class organisation with a world-class product, the mission is to effectively and efficiently manage, promote and represent the interests of the meat industry of Namibia and the function are:

- Maintain and enhance current access arrangements to existing markets in Europe and South Africa
- Develop new markets for livestock/meat products in Africa, USA or Far or Near East
- The Board is actively involved in Lomé negotiations and advises the Namibian Government.
- Improve the productivity of primary meat production with emphasis on quality and cost-effectiveness within the red meat supply chain.
- Improve the quantitative and qualitative off-take of cattle, sheep and goats according to market requirements.
- Improving competitiveness and efficiency throughout the value chain.
- Ensuring the provision of effective targeted market information.
- Deliver accurate and unbiased quality standards based on established procedures.
- To increase the industry's capability to develop and produce value added products through the provision of required information.
- To allow the industry to gain competitive advantage through innovation in supply chain management (SCM).
- To build and maintain a world class organisation by rendering cost efficient services full filling the needs of the meat industry.
- To strive for excellence in relationship management, decision-making, communication, performance reporting and accountability.
- Position the Meat Board as the respected authority on the meat industry.
- Effective promotion of Namibia's red meat products particularly focus on differentiation and branding.

6.3 Namibia Nature Foundation (NNF)

The Namibia Nature Foundation (NNF) was established to promote and support sustainable land management initiatives with the aim of developing integrated approaches in collaboration with the Government through its relevant Ministries, local communities, private sector and NGOs to achieve Namibia's development objectives and vision. NNF provide financing to research project in land and environment and also fund consultancies in these disciplines.

One such initiative has successfully been established through "Country Pilot Partnership for Integrated Sustainable Land Management framework programme" funded by the Global Environmental Facility (GEF). The main feature in this programme is the establishment of umbrella approach (breaking down the sectoral barriers) that links institutions, programmes and Namibia's priority development goals into one unified country programme that focuses on promoting action at National, Regional and community levels.

NNF in collaboration with the Ministry of Land and Resettlement also supports the Government Land Reform initiatives. Areas of support include:

- Land Reform - Providing supports in the development of a national strategy for effective and enhanced land reform in Namibia
- Resettlement support
 - Collaborate with the Ministry of Lands and Resettlement to facilitate efforts by resettled farmers within selected pilots sites to develop a common vision, management objectives and plans, and build capacity to allow them to become self-reliant and to sustainably optimise their livelihoods and quality of life;
 - Facilitate the building of partnership between resettled farmers, relevant Government departments and other support organisations to help implement the objectives, plans and initiatives to achieve optimal sustainable levels of development

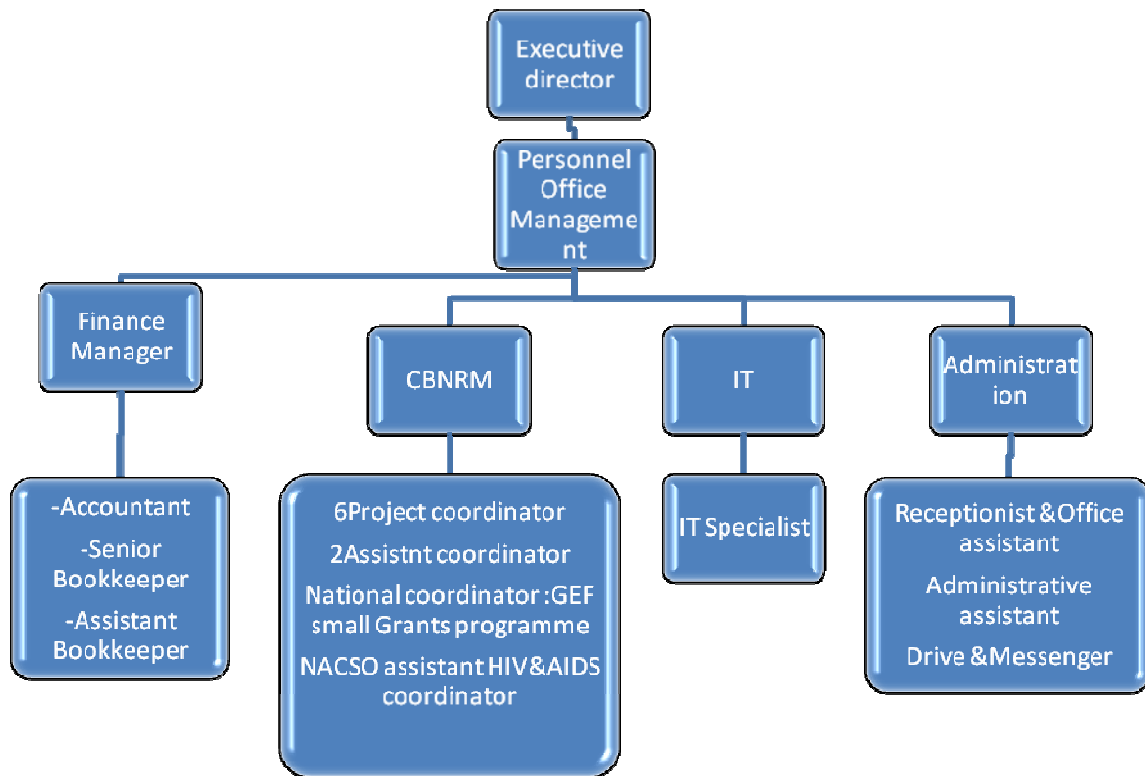


Figure 7. Management structure of the Namibia Nature Foundation

NNF works in partnership with various directorates of the Ministry of Environment and Tourism and with a range of other government organizations (e.g. Ministry of Agriculture, Water & Forestry, Ministry of Lands and Resettlement, Ministry of Fisheries and Marine Resources and Ministry of Trade & Industry) and non-government organizations.

6.4 Agribank Namibia

The Agricultural Bank of Namibia is a government-owned development finance institution constituted in December 1991 under the Agricultural Amendment Act No. 27. The Agricultural Bank of Namibia is a sustainable financial services institution that adds value to agriculture and related industries as well as rural communities. Its mission is to enhance the productivity and profitability of agriculture, rural development and related industries by providing affordable and sustainable financial products and services that add value to clients businesses.

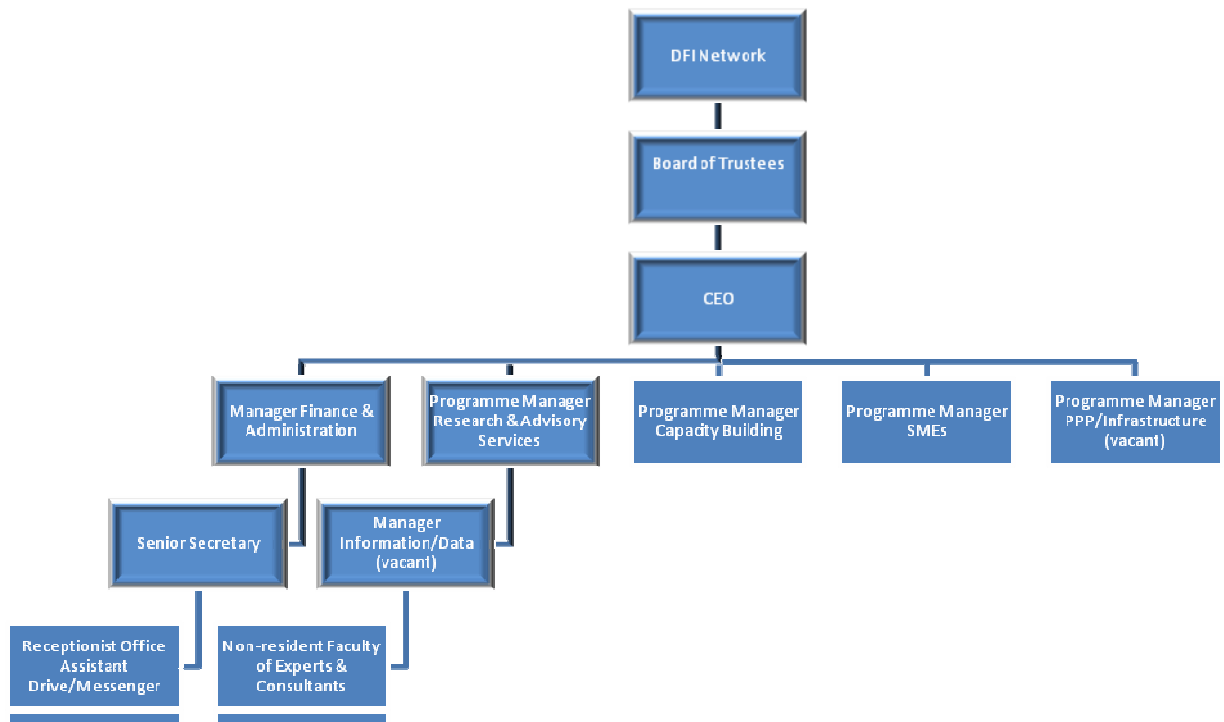


Figure 8. The Management structure of the Agricultural Bank of Namibia

6.5 Development Bank of Namibia

The Development Bank of Namibia was established in 2002 to contribute to the economic growth and social development of Namibia by providing financing in support of key development activities. The bank incorporates the functions that were carried by the National Development Cooperation of Namibia that provided financing for research and training in agricultural technology.

The DBN is governed by a Board of Directors which determines and controls the business strategy, and directs the operations of the Bank. The DBN offers businesses start-up capital and finance for expansion through these broad facilities: Public Sector, Private Sector, Enterprise Development, and SME Finance Facilities.

6.6 Desert Research Foundation of Namibia

The DRFN is a Namibian non-governmental sustainability organization aiming to enhance decision-making for sustainable development through research, training and consultancy in the country's land, water and energy sectors.

DRFN empowers decision-makers at all levels through, capacity building, facilitation, knowledge generation and sharing in order to promote sustainable development.

The DRFN works collaboratively in all sectors involved in management and use of natural resources, concentrating on the agriculture, energy and water sectors, with government, commercial, non-governmental and community-based organisations.

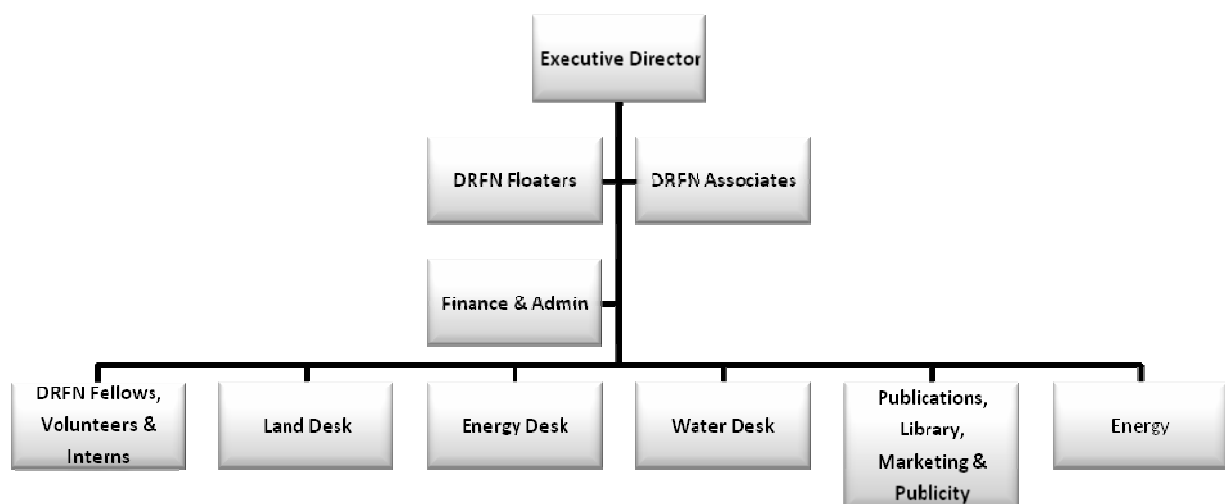


Figure 9. Management structure of the Desert Research Foundation

The DRFN holds agreements with many other institutions through which its extensive programme of internships, education, and training, are carried out. Through these programmes, DRFN helps to raise international awareness of the problems and concerns facing Namibia and arid, as well as to strengthen both the DRFN and its partner institutions through cooperation and shared learning.

This table reports the total number of employees at the DRFN as at 30 June 2008.

Table 3: Workforce Profile

| Job Category | Men | Women | Description of Job category |
|---|------------|--------------|---|
| Executive Directors | 1 | | Self explanatory |
| Senior Management | 4 | 1 | This category includes: Desk Coordinators, we have 5 desks (water, land, energy, Publication & Administration and Finance) within the DRFN and each desk has a coordinator |
| Middle Management | | 4 | This category includes:: Project Managers, Librarian & Assistant Accountant |
| Specialised/ skilled/senior supervisory | 4 | 1 | This category includes: Accountants, Agricultural Technicians, Life Skills Technicians, DRFN Floaters (staff who work across all 5 desks within the DRFN) and consultants with specialized skills i.e. in land reform, climate change etc. Some people in this category have PhDs. |
| Skilled | 1 | 3 | These are Junior Project Managers & Field facilitators. Some people in this category are BSc. & MSc holders. If I include the receptionist, assistant administrator and other field facilitators who do not have Tertiary qualifications but have certificates in their area the number increases to 5 men & 5 women. |
| Semi-skilled | 1 | 1 | This category includes the cleaners and gardeners. |
| <i>Total permanent</i> | 11 | 10 | |

Thus, in total there are 21 permanent employees at the DRFN. This excludes interns and temporary employees who are usually common at the DRFN.

6.7 Namibia Agricultural Union (NAU)

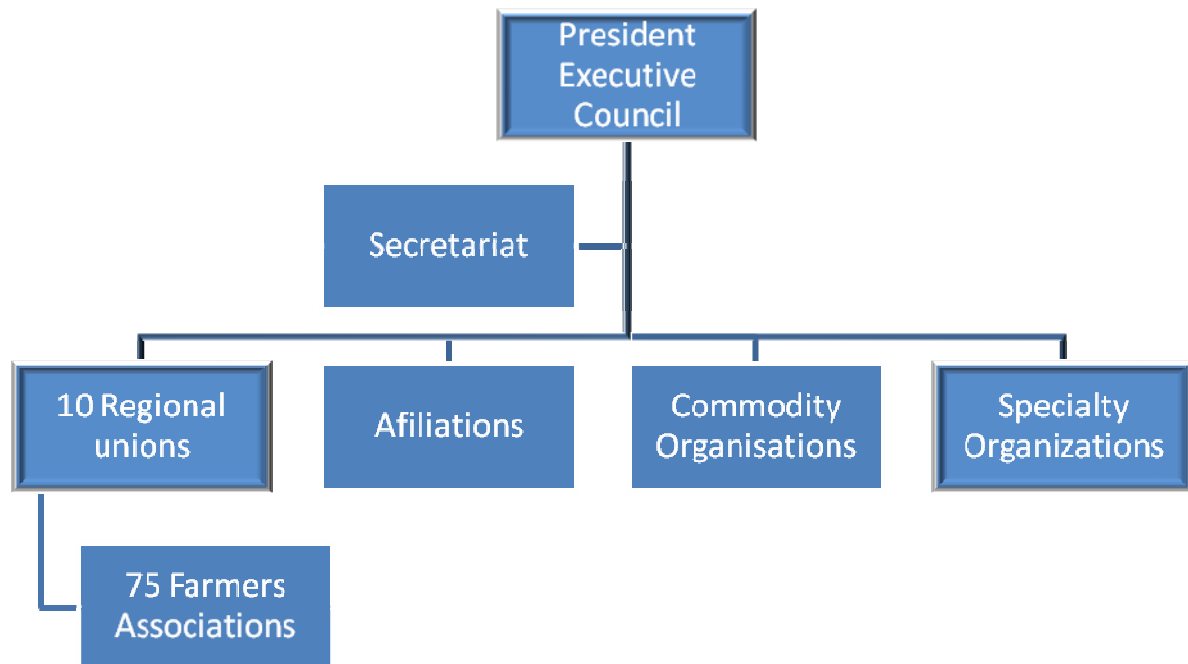


Figure 5. Organogram of the Namibia Agriculture Union

The main responsibilities of the NAU are:

- To promote/enhance a conducive environment for sustainable agriculture
- Act as the umbrella policy for organized agriculture in Namibia
- Manages all general agricultural matters at national and international level, including:
 - making decisions;
 - Preparing and addressing representations.
 - Serves as communication forum.

The objectives are as follows:

- To organize the agricultural entrepreneurs of Namibia as well as the agricultural co-operatives into a united front, thereby making it possible to co-ordinate all viewpoints so

that the agricultural community may express itself through one mouthpiece with regard to issues of general as well as specific interest;

- To maintain a central body representative of all agricultural interests in Namibia, in which all agricultural producers, including agricultural co-operatives and special agricultural organizations, may feel at home;
- To co-ordinate the opinions of all agricultural producers with regard to issues of general or specific interest, taking into account the interests of the farming industry as such, as well as the population as a whole;
- To form joint ventures, to affiliate or form a federation with agricultural organisations outside Namibia, so as to promote a healthy, stable national economy, fully taking into consideration the interests and needs of the various ethnic groups, as well as the country as a whole;
- Where necessary, to submit the co-ordinate opinion of the agricultural sector to the authorities, and to co-operate with them in all matters affecting the welfare of the agricultural industry, with a view to solving the existing problems and drafting required legislation;
- To promote agricultural co-operatives and agricultural associations within the farming community;
- To actively support and propagate the promotion of agricultural training and education;
- To keep agricultural producers informed of all matters affecting their specific branch of the industry, their general interests, and the agricultural industry within the framework of the national economy;
- To work towards systematic, environmentally-friendly development of the agricultural industry, including the conservation of the soil, water resources, and the land; the maintenance and improvement of soil fertility and improved production methods;

6.8 Namibia National Farmers Union (NNFU)

NNFU is a national federation of regional farmers' union. It is established in 1992 to serve as a mouthpiece for communal land farmers. Twelve regional farmers' unions are affiliated. NNFU is a registered as an association not for gain' in accordance with provisions of section 21 of the Company Act, Act No 61 of 1973. NNFU aims to increase food production for household food security, enhance marketing of farming products to increase household income, increase participation and recognition of women in farming, contribute to environmental protection and sustainable utilization of natural resources.

NNFU has 10 administrative staff at head office, called the Central Support Unit that plays an important co-ordination function, in Windhoek and the bulk of administrators are in the regions through regional unions and farmers' organizations.

Among the many focused areas of the NNFU, the following

The involvement of the Namibian small scale farmers in the design or implementation of key governmental agriculture initiatives.

The provision of training and capacity building to regional unions and the local farmers' associations to take advantage of agricultural initiatives

Better understanding of small-scale farmers on policies, law and acts to that affect them.

The NNFU is a member of SACAU since 1996 together with the Namibia Agricultural Union. It is also a member of the Joint Presidency Committee comprising the NNFU and NAU, a member of the Agricultural Trade Forum (ATF) and a member of the Livestock Producer Forum.

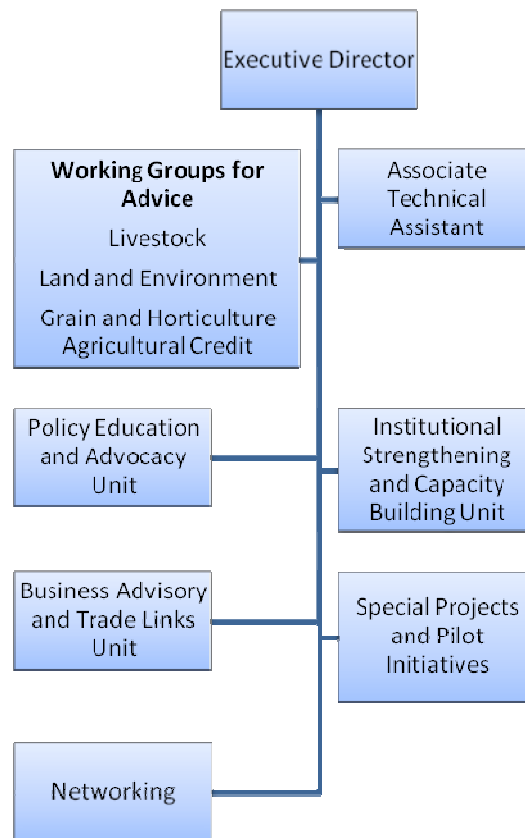


Figure 6. Organogram of the Namibia National Farmers Union

6.9 Agri-Futura

Agri-Futura was established in 1993 to provide agricultural training to semi-skilled and unskilled employees and rural communities. Since then the company has developed 24 training courses which are custom-made for the development of people at grass roots level but which can be enriched for trainees at a higher level of development.

The institute offers training in the following fields: Technical, Agricultural, Business, Skills Training, Self-development, and more. The objective of the institute is to bring about social upliftment of rural communities, to enhance self-development and self-reliance, to transfer knowledge and skills in order to enhance abilities, and to promote entrepreneurship individually and collectively.

The institute has also been very active in the field of business training for small and medium entrepreneurs who either wish to start an own business venture or to expand an existing business. Emphasis is also placed on facilitating training for women's groups.

Agri-Futura facilitates the opportunity for employees to be trained by taking training to them on farms or to remote rural areas.

7. Establish the list of registered institutions/organizations delivering agricultural research

There is no agricultural research institution in Namibia and agricultural research is therefore scattered and driven by funding. There is no control board or an institute that synchronize research in agriculture. Funding for research is mainly from external organizations in the form of aid. Such research projects are externally controlled and findings are in foreign language other than English. That makes it less useful for dissemination. Many research projects are now offered as consultancy to institutions or individuals as secondary activities of a very short period. Proper research by private sector is less attractive undertaking and consultancy has gained momentum as a result.

8. Establish the list of registered Institutions/organizations delivering high level training and in-service professional training in Agriculture.

Many institutions, including the Government, in Namibia offer in-service training to their employees but no professional training in agriculture. There are two institutions that are primarily for formal agricultural training, the University of Namibia and the Polytechnic of Namibia. They are profiled as follows:

8.1 The University of Namibia (UNAM)

UNAM was established by an Act of Parliament (Act No 18 of 1992) on 4 August 1992 and the Act became operative on 31st August of that year.

The Vision of the University of Namibia as the national university is to engage with society in the creation and dissemination of knowledge, through teaching, research and advisory services, and a commitment to lifelong learning; thereby becoming a treasure house of knowledge at the service of national development, and available to all in forms directly relevant to the improvement of the quality of their lives. Its mission is to engage in socially and nationally relevant, academic and technical training, research and educational programmes with the involvement of all stakeholders in a conducive environment for learning, innovation, knowledge creation, professional development, functional skills development and development related competencies, within the cultural context of the Namibian people.

In order to achieve this Mission, the University of Namibia is committed to the following operational principles. These are to:

- Continue to develop the University as a leading national institution and a major contributor to nation building, and gives high priority to applied research across a broad spectrum of

relevant fields and encourages inter-disciplinary approaches to the resolution of real-world problems;

- Cultivate standards of excellence in teaching, research, and all functions of UNAM, through encouraging constructive criticism, constant self-improvement, self-evaluation, and peer assessment.
- Make the University services, expertise, skills, scholarly leadership, and facilities, accessible those who are like to benefit from them, regardless of race, color, gender, ethnic origin, religion, creed, political affiliation, and physical conditions, social and economic status.
- Safeguard and promote the principle of University autonomy, with the view to providing an appropriate atmosphere and opportunities for UNAM's scholars to develop their highest intellectual potential.
- Serve as a repository for the preservation, development and articulation of national values and culture, through the promotion of Namibian history, art and languages.
- Undertake basic and applied research, with a view to contributing to the social, economic, cultural and political development of Namibia.
- Encourage endogenous development and application of science and technology.
- Provide advisory, consultancy, and extension services throughout the country, with the view to promote community education and appropriate know-how, thus enhancing Namibia's productivity and socio-economic development; and to
- Promote national and regional unity and understanding.

Faculties

Agriculture and Natural Resources

Economics and Management Science

Education

Humanities and Social Sciences

Law

Medical and health Sciences

Science

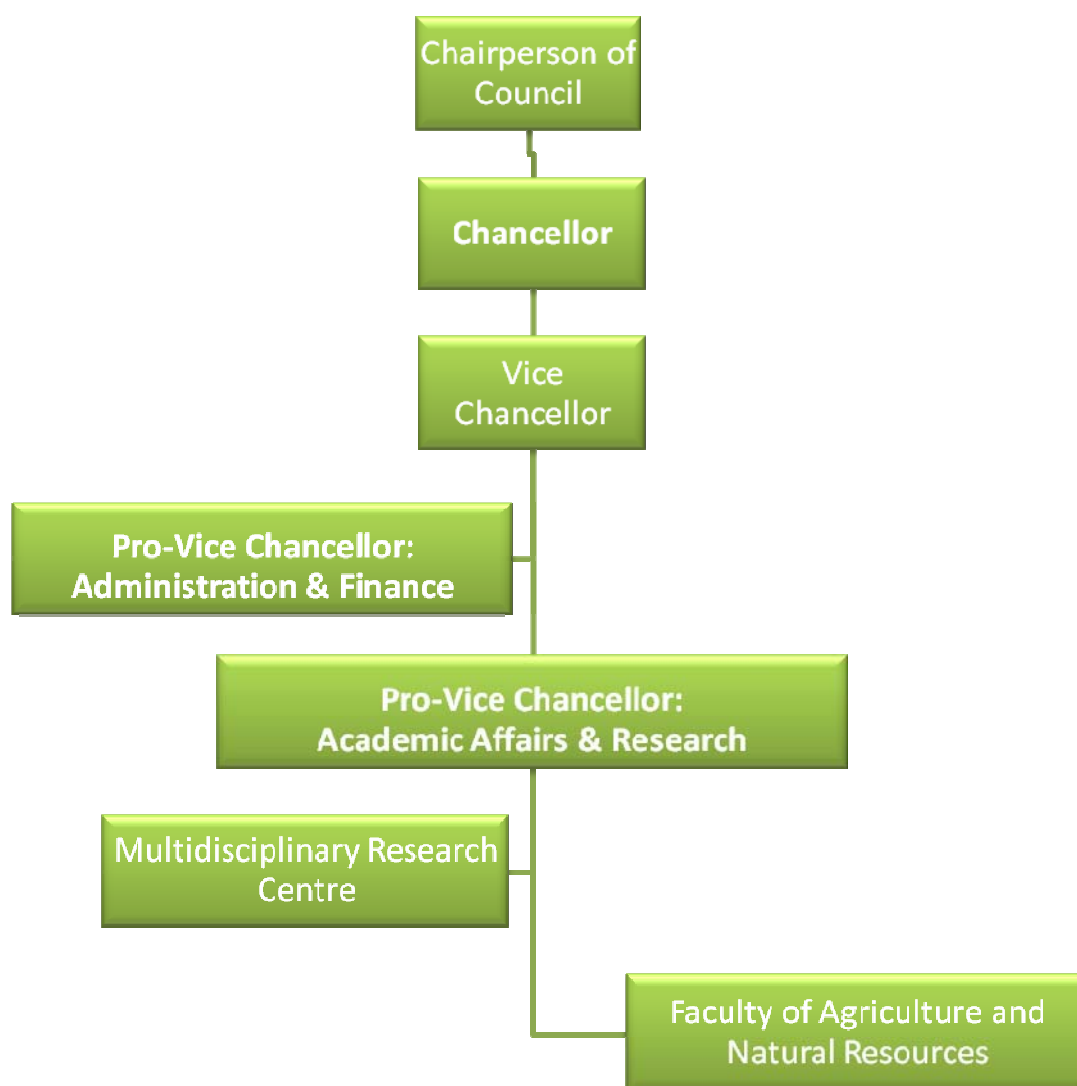


Figure 10. Organogram of the University of Namibia

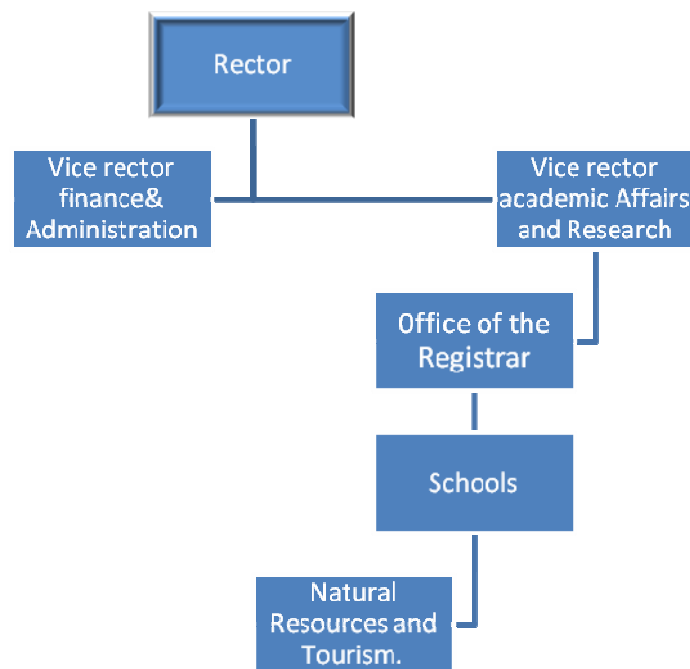
Table 4. Number of professional and technical staff employed in research and training in the Agriculture and Natural Resources

| Department | Research and Training Staff |
|------------------------------------|-----------------------------|
| Agricultural Economics | 11 |
| Animal Science | 21 |
| Crop Science | 17 |
| Food Science and Technology | 8 |
| Natural Resources and Conservation | 12 |

The Department of Natural Resources and Conservation is in the process of splitting into two departments: Department of Fisheries and Marine Sciences and Department of Integrated Environmental Science.

8.2 Polytechnic of Namibia

The Polytechnic of Namibia grew out of the Technikon and the College for Out of School Training components of the former Academy for Tertiary Education. The Polytechnic of Namibia Act (Act No: 33 of 1994) formally established the Polytechnic of Namibia and mandated it to develop and provide career-oriented tertiary education.



Under this act, responsibilities of the Polytechnic of Namibia are as follows:

- Post-secondary career education;
- Continuing education at the post-secondary level;
- Applied research;
- Equal opportunities;
- Effective collegial governance.

School of Natural Resources & Tourism

The school has the following departments:

- **Agriculture**
- Nature Conservation
- Land Management
- Land Use Planning
- Land Surveying
- Land Valuation
- Land Registration
- Rural and Urban Development
- Environmental Health
- Hospitality
- Tourism

Table 5. Number of professional and technical staff employed in research and training in the Department of Agriculture of the Polytechnic of Namibia

| Department | Research and Training Staff |
|-------------|-----------------------------|
| Agriculture | 7 |

9. Assess with the Ministries the formal existence of NARS and the monitoring mechanisms, the contribution of research stakeholders

The National Agriculture Research System in Namibia is well defined in the Directorate of Agricultural Research and Training of the Ministry of Agriculture, Water and Forestry. The overall impression is that agricultural research should be more accountable to the national agricultural development (Vision 2030 and NDPs goals) and market oriented. Before independence, the agricultural systems were based on commercial land tenure only. After independence the country did not have favorable policies for guiding the NARS and the Ministry engaged in policy formulation and adoption. The National Agricultural Plan was put into effect and the research and extension systems were reoriented to uphold communal land tenure as a priority. Donor funds and projects were directed toward the development of agriculture in communal land, particularly in the northern regions because of past destructions. These policies forced governments to make tough decisions on reform of management at national, regional and local levels. With every Ministry in the Government now directing resources to policy formulation exercise, the multidisciplinary principles of the NARS started getting fragmented.

After the end of NDP1 in 2000, it was realized that the resources should be focused by sector and each Ministry should uphold its portfolio and national duties. NDP2 fragmented the NARS principles further, but rearranged sector and identified strengths and weaknesses within sectors. A new review of the NDP2 prescribed the return to a multidisciplinary and interdependent sector system. The policies entail that NARS need a reassessment in terms of their mandate, approach, size and composition, resources and other vital elements. After independence in 1990 the new Government policies also gave rise new semi-government institutions and organizations that were tasked to primarily for training and research. The term agriculture development in Namibia is nearly synonymous

to rural development. Agriculture also expands further to fish farming, land tenure, financing and environment. That compels many ministries semi-government institutions and private organizations to partake in the development of the NARS. Funding and expertise were highlighted as the two major contributors toward the development of the NARS. Institutional reorientation and pluralist approach from all stakeholders will address the shortfalls brought by funding and expertise to a greater extend.

10. Provide charts indicating institutional structures and relationships

Institutional Linkages

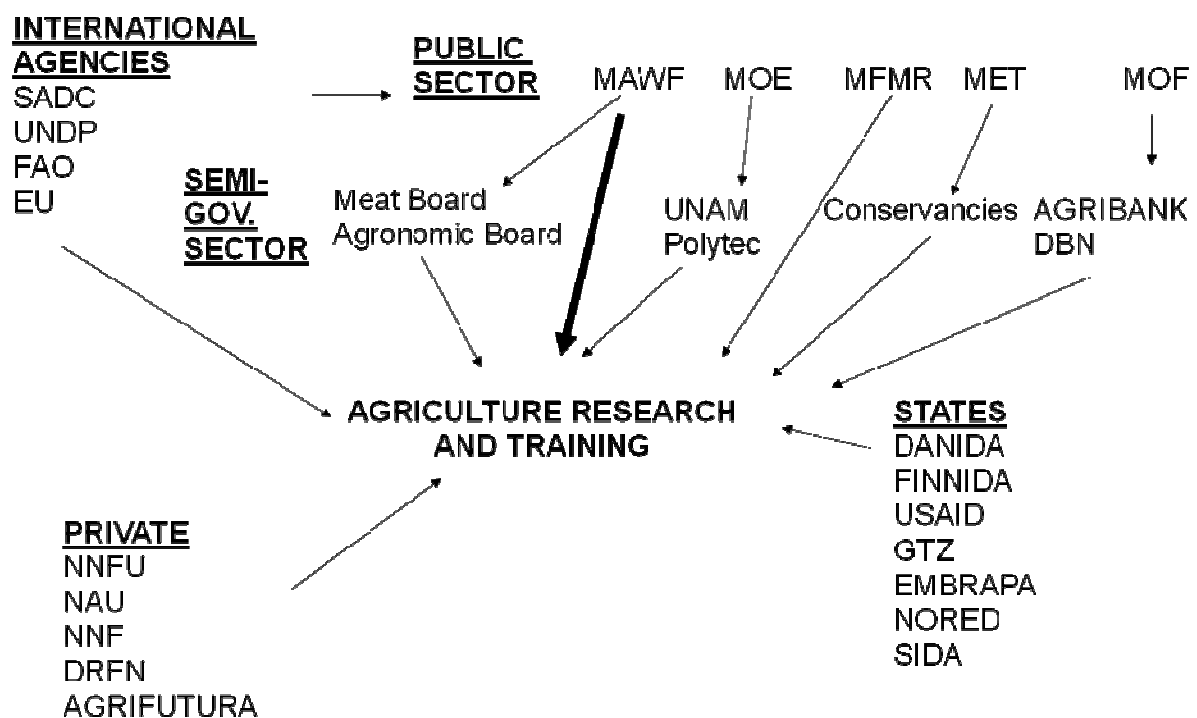


Figure 11. Institutional arrangement in the agricultural research and training as direct and indirect stakeholders in Namibia

International agencies and States contribute through government signed agreements. Bilateral agreement between States and Namibia do not dictate the terms of contribution by the Agencies and vice versa and such understanding give freedom of operation and healthy relations between States and Namibia. Being a member of the United Nations and signatory to UN conventions, the Namibian Government is enjoying consistent technical, material and financial assistance from the international agency.

The Ministry of Agriculture, Water and Forestry (MAWF) is the custodian of agricultural research and training while the Ministry of Education (MoE) is in charge of all national training. Through training institutions (University of Namibia and Polytechnic of Namibia) the MoE is not restricted to agricultural training alone but also research and community development.

Within the country, there are three types of sectors that function in a different ways, namely the public sector, the semi-public or parastatal and the private sector. By definition, the public sector is the government and is directly monitored by the parliament. The semi-public or parastatal organizations are Government companies and agencies that are not directly controlled by Government and with no explicit profit making objectives, except stipulated clearly in the Act of their existence. Government however, has autonomy on the policy and public funding that goes into these companies. Private sector is made of agencies whose primary activity is the production of goods and services for profit, although agricultural unions and the others that are involved in agricultural training and research are an exception. Such organizations survive from membership fees and projects from government and international agencies. They also win consultancy projects and involve in partnership with other agencies as executing bodies.

- Linkages between agricultural research and training institutions have room for improvement. Ministry of Agriculture, Water and Forestry has a directorate of Agricultural Research and training that is the custodian of Agricultural Research and Training in the Ministry. Moreover, Directorate of Engineering and Extension Services is also given a task to train farmers on technology. The Directorate of Veterinary Services, through its diagnostic services and research division, does problem-oriented veterinary research and training. The Directorate of Planning implements co-operatives education and training while also providing information and co-operative training materials, while the Directorate of Forestry provides training and forestry research information dissemination. Research and training is therefore spread across many directorates and divisions within the Ministry for the purpose of specialization but has created poor research and training coordination.
- The Ministry's Directorate of Research and Training does not have a mandate to control private sector and parastatals and therefore will not be able to be able to coordinate any research and training outside its mandate. The Ministry, however, sits in highest decision making bodies of many of these institutions and may provide policy guidelines and government position. Such directives are difficult to evaluate at the implementation level. Although the Ministry of Agriculture, Water and Forestry may make consultations with

other institutions of relevance in agricultural research and training, such consultations is the prerogative of the Ministry rather than being compelled by written policies.

- The Agricultural Sector interacts with many other sectors in the public service of Namibia. Activities of the Directorate of Agricultural Research and Training therefore overlap with those of Ministry of Environment of Tourism, Ministry of Lands and Resettlement through land allocations and tenure, Ministry of Trade and Industry through export-import and food security, Ministry of Education through tertiary education institutions, Ministry of Fisheries and Marine Resources through diversification into aquaculture and surface water management, Ministry of Finance through agricultural financing institutions. A mechanism to assess the level of interaction at researcher/trainer and farmer's level is difficult to appreciate.

10. Document the working methodology (how do we fund, identify priorities, establish collaboration).

1. Establish and strengthen a National Agriculture Research Institute (NARI) through funding, policies and management system.
2. Integrate agricultural research, training and community service programs at national level. Creation of interdependency among all stakeholders through a unified mandate and responsibilities.
3. Regionalized curricula that allow translation of credits and ranks among all training institutions in Namibia and SADC.
4. Funding for Scientific Equipment.
5. Research and publication in Namibia is fragmented and the bulk of research does not reach the publication stage. Local publications are not internationally recognized and there is a need to upgrade research publications and promote interlibrary access.
6. Staff and student exchange. There is a need to mobilize and intensify the expertise in various agricultural disciplines. There is a need for recognition of interdependency of expertise in a dynamic agricultural system that foster to meet environmental, social and economic challenges from national level to regional level.
7. Focused short courses to farmers and staff through funding to conferences and focused workshops. Promotion of farmer's organizations and unions to regional level forums through development funds and information sharing.
8. Promote regional Agricultural Postgraduate programs in the SADC region through regional funding and networking.

Priority Fields

1. Water Management and Hydrology
2. Agro-meteorology and Climate Change
3. Agricultural Production and Economics
4. Land Use Planning and Land Management
5. Intensive and Protected Crop Technology (irrigated, fertilized, greenhouse technology).
6. Livestock, fish and wildlife health (local and regional pest and diseases)
7. Food Processing and post harvest technology
8. Natural Resource Conservation

12. Identify actual and potential demand for cooperative relationships between research and training institutions and farmers' organizations and private sector

In Namibia, farmers are represented in the two unions, the Namibia Agricultural Union that is originally having its roots in the commercial farming sector and the Namibia National Farmers Union (NNFU) that is communally based. Both these unions are independent entities and have no direct objectives in research and formal training, but collectively there are many organizations and boards under these two umbrella bodies. In order to be competent in the changing global environment, the unions should pronounce themselves in research through direct representation in the NARS. Reference is made to Chapter 6. Farmers unions are also involved in land mediation forum of the Permanent Technical Team together with the Ministry of Lands and Resettlement and non-governmental organizations involved in financing land reform.

Farmers Unions identified the increased effective livestock production by development and effective utilization of the database programme, diversification of the market for beef production, improvement of small stock marketing, improved animal health and veterinary services, testing and increased efficiency of feed and licks against undesirable additives and prohibited agents through a policy document, stock theft act and effective law enforcement agency, improved labour relation between farmer and farm workers organizations and unions, addressing HIV/AIDS in agricultural production, bring farmers to the forefront of Vision 2030 and other national goals of importance, improved dairy production, storage expansion, increased local processing facilities and protection of the market, grain, vegetable and fruit production, storage and marketing, faster development of the Green Scheme project.

Farmers organizations also demand improvement of smaller industries in agriculture, namely poultry production through improved local industry, charcoal production and financing, rangeland degradation by overgrazing and bush encroachment, and charcoal production and marketing, harmonization of livestock-wildlife relations in farming,

Recently, the two Unions joined hands with the Office of the President in a big undertaking called the Joint Presidential Commission (JPC) to establish a single institution that will represent all farmers, emerging commercial farmers' support program, land mediation forum and address the human/wildlife conflict.

The need to address their concerns and cooperation through their workshops and conferences was emphasized as most of the hard core problems are policy and environment related. Drought, floods, pest and disease outbreaks are some of the natural calamities that need investigation and mitigating strategies. The cooperation between farmers and private sectors are localized and function driven. Such cooperation is not at umbrella level and will have secondary importance at the umbrella level. This is because to the vastness of the country, the mandate of the umbrella body and many organizations involved. There is room for improvement in this relationship.

13. Document and Appraise in country research alliances

Reference is made to the institutional linkages in Chapter 15 above.

NARS in Namibia includes fisheries, natural resources, wildlife, land and environmental research. Agriculture is therefore not a stand-alone discipline, and correctly so, it includes crops, livestock, forestry, natural resources, rural development, and rangeland and ecosystem management. Each public and semi-public institution is allocated a budget from Government. Since independence, 18 years ago, the agricultural research shifted from sole emphasis on commercial sector to the communal sector of Namibia, with the northern regions dominating the emphasis. The vastness of the country in terms of geographic extent drains human, financial and material resources and coupled with high national demands makes agriculture one of the most expensive disciplines in the country. The rising costs of fuel has caused major drawback in agricultural research as the result of high rocketed transport costs.

Namibia is a livestock production country and through the Directorate of Veterinary Service and the Division of Livestock Production in the Directorate of Research and Training, the emphasis on research and technology is undoubted. Crops and forest products will continuously be secondary to livestock production although new emphasis through the “green scheme” and “climate change” will raise this awareness and, hopefully, their emphasis on intensification and sustainable production.

The research budget allocation is left at the discretion of the individual institution and therefore provides a sense of independency in the activity of the research and the funding thereof. That makes the link between institutions in terms of research poorer. A research institution such as the National Agriculture Research Institute (NARI) that coordinates NARS principles and research at national level is required. A good example of such an institution is the Agricultural Research Council (ARC) of South Africa or the Agricultural Research Service (ARS) of the United States of America. The ARS works to ensure reliable, adequate supplies of high-quality food and other agricultural products. ARS accomplishes its goals through scientific discoveries that help solve problems in crop and livestock production and protection, human nutrition, and the interaction of agriculture and

the environment. The ARC of South Africa is built on similar principles and is given mandate to be implementing agent for focused agricultural research of national value.

Namibian agricultural research and training is mainly collaborative and in some instances such collaboration resort to communication exchange without direct bound responsibilities. Institutions in agricultural development work independently and acquire regional and international partnerships through memoranda of understanding. Such partnerships and documentations thereof are private between the partners. Not many agricultural research and training institutions are regionalized despite the good relationships and partnerships between national and regional institutions. Farming systems are seen as a component of the Ministry of Agriculture, Water and Forestry, to extent service of the Ministry to farmers directly without involvement of the Farmers' organizations and conservancies. Farmers' Unions are well established in Namibia, in terms of policies and organizational structure. Such unions could participate in the NARI and take the farmers' voice to the region.

14. Address list of Major Stakeholders

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Ministry of Fisheries and Marine Resources (MFMR)
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Ministry of Lands and Resettlement
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