



Republic of Namibia

MINISTRY OF AGRICULTURE, WATER AND FORESTRY



ANNUAL REPORT 2016/2017



Vision

“To be recognised as the leading contributor to food security, agro product competitiveness and increased and equitable access to our natural resources for improved livelihood, wellbeing and wealth for all.”

Mission

“To promote and manage the sustainable utilisation and development of agricultural, water and forestry resources for a prosperous Namibia through stakeholder partnerships.”

Mandate

“To promote, develop, manage and utilise agriculture, water and forestry resources sustainably.”



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Acronyms/Abbreviations

ADCs	Agricultural Development Centres
AMESD	African Monitoring of the Environment for Sustainable Development
AMIS	Agricultural Management Information System
BSE	Bovine Spongiform Encephalopathy
BMCs	Basin Management Committees
BRAHMS	Botanical Research and Herbarium Management System
CBOs	Community Based Organizations
CBMMP	Co-operative Business Management Mentorship Programme
CBPP	Contagious Bovine Pleuropneumonia
CEB	Cuvelai- Etosha Basin
CVL	Central Veterinary Laboratory
DAT	Division of Agricultural Training
DCPP	Dry Land Crop Production Programme
DCD	Division of Co-operative Development
DAPEES	Directorate of Agricultural Production Extensions and Engineering Services
DPBD	Directorate of Planning and Business Development
DSA	Daily Subsistence Allowance
DVS	Directorate of Veterinary Services
DWSSC	Directorate of Water Supply and Sanitation Coordination
EIA	Environmental Impact Assessment
ELISA	Enzyme-linked Immuno sorbent Assay
EU	European Union
FMD	Foot and Mouth Disease
FVO	Food and Veterinary Office
IAEA	International Atomic Energy Agency
ICEIDA	Iceland International Development Agency
IFMS	Integrated Information Management System
IPP	Indigenous Plants Products
IWRM	Integrated Water Resources Management
LDC	Livestock Development Centre
MADI	Mashare Agricultural Development Institute
MAWF	Ministry of Agriculture, Water and Forestry
MCA-N	Millennium Challenge Account –Namibia
MESA	Monitoring of Environment and Security in Africa
MLR	Ministry of Lands and Resettlement
MMDP	Middle Management Development Programme
MoU	Memorandum of Understanding
MT	Metric Tons
MTEF	Medium Term Expenditure Framework
NAB	Namibian Agronomic Board
NAMIRES	National Integrated Monitoring Report and Evaluating System
NamWater	Namibia Water Corporation
NamLITS	Namibia Livestock Identification and Traceability System
NAWASA	Namibia Water Supply and Sanitation Sector Programme



NBRI	National Botanical Research Institute
NBG	National Botanic Garden
NCA s	Northern Communal Areas
NCS	Namibia Custom Smelter
NDP 4	Fourth National Development Plan
NDT	National Development Trust
NGOs	Non-Governmental Organisations
NMS	Namibia Meteorological Services
NPC	National Planning Commission
NPGR C	National Plant Genetic Resources Centre
NRA	Natural Resources Accounts
NRMP S	National Rangeland Management Policy and Strategy
NRSC	National Remote Sensing Centre
NYS	National Youth Service
OBSC	Okavango River Basin Steering Committee
OKACOM	Okavango River Basin Commission
ORASECOM	Orange-Senqu River Basin Commission
ORIP	Orange River Project
PJTC	Permanent Joint Technical Committee
PPD	Plant Product Development
PPR	Peste Des Petites Ruminantes
PWC	Permanent Water Commission
RAEIN-AFRICA	Regional Agricultural and Environment Initiative Network-Africa
RPRP	Rural Poverty Reduction Programme
RTPCR	Real Time Polymerase Chain Reaction
SADC	Southern African Development Community
SADCAS	Southern African Development Community Accreditation Services
SASSCAL	Southern African Science Service Centre for Climate Change and Adaptive Land Management
SAREP	Southern Africa Regional Environment Programme
SAT	Southern African Territories
SCA	Saving and Credit Associations
SMDP	Senior Management Development Programme
SSBPSP	Small Stock Bee Production Support Project
TAZAC	Tsumis Arid Zone Agricultural Centre
TDA	Transboundary Diagnostic Analysis
ToR	Terms of Reference
UNAM	University of Namibia
VCF	Veterinary Cordon Fence
WAQIS	Water Quality Information System
WARSCO	Windhoek Artificial Recharge Steering Committee
WASH	Water Supply, Sanitation and Health
WATSAN	Water Supply and Sanitation
WCA	Water Controlled Areas
ZAMCOM	Zambezi River Basin Commission



Functions of the Ministry of Agriculture, Water and Forestry

Policy and Legal Framework

To create an enabling environment in order to develop, manage and sustainably utilise agricultural, water and forest resources for socio-economic development.

Agricultural Development

To develop, promote and facilitate management of the agricultural sector through the application of modern techniques, science and appropriate technology.

Extension Services

To provide extension services in the form of information, advice and training to farmers, agro-based industries and other stakeholders and to promote technology development, adaptation and adoption.

Inspection/conformity Services

To formulate regulations and policies and create awareness in order to ensure conformity to regulations and policies on plant and animal health quality and safety, including the use of agro-chemicals.

Engineering Services

To plan, design and develop agricultural, water and forestry infrastructure and equipment for the implementation of programmes and projects on irrigation, livestock, agro-industry, dry land production, horticulture, marketing and storage of agricultural products.

Research and Development

To undertake research and development in all ministerial sectors in order to enhance growth and increase productivity in a sustainable manner.

Economic Planning and Business Development

To undertake feasibility studies on high potential and economically viable projects and products, and conduct market research for the purpose of drafting policy papers on agriculture, water and forestry for use by decision-makers and other role players in the private and public sectors.

Rural Water Supply

To ensure the development of rural water supply infrastructure and ensure access to portable water by rural communities for human and livestock consumption and income generating activities on a cost recovery basis.

Water Resource Management

To assess and evaluate the national water resources and ensure sustainable management and utilisation thereof.

Bulk Water Infrastructure Development

To ensure the sustainable development of bulk water supply infrastructure for the use of urban domestic, industrial, mining and irrigation development.

Forestry Management

To develop, manage and facilitate the economic and sustainable utilisation of forest resources.



Co-operative Development

To promote and support the establishment and growth of co-operatives for socio-economic development.

Corporate Governance

To support the mandate of MAWF by establishing and maintaining an effective and efficient administrative system able to manage human and financial resources, as well as assets and information technology.

International Co-operation

To ensure participation in meetings of the applicable organisations and institutions of which Namibia is a member; to adhere to the bilateral, regional and multilateral cooperation agreements and international treaties which promote the advancement of knowledge, skills and technologies for the agriculture, water and forestry sectors; and to facilitate regional and international integration and benefit-sharing.

Institutional Development

To develop an appropriate institutional framework to undertake specialised functions for agriculture, water and forestry and to constantly develop, review and ensure the responsiveness of such institutions and structures to the mandate of MAWF.

Co-operation with Stakeholders and Industrial Organisations

To create an enabling environment conducive to the growth of businesses, information exchange on issues of mutual interest, consultation on major policy decisions and new developmental initiatives, and implementation of programmes and projects based on the principle of Public Private Partnership.

Veterinary Services

To provide veterinary services to ensure animal and public health and to comply with the requirements for national and international trade.

Plant health and Bio-security

To provide plant health services to ensure bio-security for enhanced production and marketing through the establishment of policy and legal instruments, thus ensuring conformity to international phytosanitary standards.

Conservation of Genetic Material

To develop and/or conserve plant and livestock genetic material for future use.

Laboratory Services

To provide analysis of water, animal, plant and soil samples for the purposes of screening, identification, diagnosis, quality assurance, documentation and advisory services.

Soil Management

To develop and promote sustainable soil management practices in the agriculture, water and forestry sectors through appropriate policy and legal instruments.



Foreword by the Minister



The Ministry of Agriculture, Water and Forestry continues to carry out policy review, coordinate the strategic planning processes, monitor and evaluate development programmes and coordinate sectoral planning. To that effect, the Ministry has reviewed the 2012/13 - 2016/17 strategic plan and submitted the same to the Office of the Prime Minister.

During the period under review the Ministry has compiled and submitted the 2016/17 Annual Budget Execution Plan Report to the National Planning Commission (NPC). The report contains information on progress made regarding the implementation of the Ministry's capital projects, highlighting project expenditure during the period under review.

The Ministry has furthermore monitored and evaluated the Rain-fed Crop Production Program in all crop growing regions and thirteen other Ministerial capital projects. The aim of the monitoring and evaluation of this program is to verify the progress made against the information provided in the Budget Execution Plan Report and the NDP4 bi-annual report, amongst others.

The Ministry has coordinated the Ministerial Development Budget process and has submitted the project identification forms information for the 2017/18-2019/20 financial years to the NPC. The Development Budget contains information on the activities planned under the Medium Term Expenditure Framework (MTEF) as well as the amount budgeted for, and also reports on past achievements.

In order to increase the food production in the country, implementation of the Rain-fed Crop Production Programme continued in the following regions: Kavango East, Kavango West, Zambezi, Kunene North, Omusati, Oshana, Oshikoto, Ohangwena, Otjozondjupa and Omaheke Regions.

This programme remains a high priority for the Government and is aimed at empowering farmers in order to improve production in crop growing regions by providing subsidised agricultural inputs such as seeds and fertilisers. It will also provide farmers with subsidised mechanisation services such as tillage and weeding services.

Moreover, in the area of water supply, eighty-two (82) water points were rehabilitated, three (3) boreholes drilled, seventeen (17) boreholes installed and thirty-six (36) short pipelines were constructed in 13 regions, excluding Khomas Region.

In addition, the construction of the Tses Rural Water Extension Centre (RWEC) in the //Kharas Region has been completed and the feasibility studies for the construction of constituency offices in the Omaheke (Otjinene and Eiseb) Erongo (Tsubisis, Omatjete and Uis) and Otjozondjupa Regions (Tsumkwe and Gam) are finalised.

In the area of veterinary services, a total number of four drive-through disinfection facilities at Oshivelo, Tsintsabis, Mururani and Werda Gates were constructed. These facilities will assist significantly in alleviating traffic congestion at these gates by expediting speedy disinfection of vehicles during disease outbreaks in the Northern Communal Areas, especially Foot and Mouth Disease.



Veterinary fences, which play a major part in preventing the entry or spread of animal diseases, have also been upgraded, including the electrification of strategic sections of the Namibia-Botswana border and internal fencing. Further work is scheduled for the next financial year.

In the area of Forestry, The National Strategy on De-bushing was finalised and printed and is ready for submission to Cabinet for approval. A booklet focusing on the process of bush harvesting was developed and printed in line with this strategy. This booklet and the strategy itself were both developed with financial assistance from GIZ.

A total of 18,842 permits were issued for utilizing forest products, while 104 fines were issued to people illegally transporting or harvesting forest products. A total of 581 roadblocks and 644 patrols were conducted.

In conclusion, I would like to thank all MAWF staff and all stakeholders within the sector for their continued commitment, hard work and undeterred support towards the achievement of our organisational objectives. Going forward, I would like to urge everyone to redouble their efforts in ensuring that Government projects, policies and programs are timely and practically implemented for the benefit of all citizens, residents and visitors of the Republic of Namibia.

Lastly I would like to thank all development partners, investors, industry players and the public at large for their continued reliable support and constructive contributions towards the achievement of our set national goals. The struggle for development continues and we must all remain determined and focused in order to succeed!

Victory is, and remains, certain.

A handwritten signature in black ink, consisting of a series of loops and a long horizontal stroke, positioned above a dotted line.

John Mutorwa, MP
Minister



Executive Summary by the Permanent Secretary



The ministry of Agriculture, Water and Forestry, as per its mandate, continues to provide extension services to the agricultural sector in the form of advice on agricultural policies, strategies, projects, practices, skills and technologies, information dissemination, training, awareness and demonstrations throughout the country by using participatory approach as that places sensitization campaigns, responsibilities of the development process in the hands of rural communities.

Through the extension offices, five (5) farmers from the Fransfontein ward visited Bergvallei, a commercial farm in the Kamanjab district, to sensitize them on technologies for the production of animal feed by crushing shrubs and bushes. Farmers were also exposed to improved small stock management for Boer goat. In addition, twenty seven (27) farmers undertook two (2) exposure visits to the Windhoek Agriculture and industrial show, and to the Hardap Green Scheme Project as well as Namib Dairies.

Furthermore, the Dry Land Crop Production Programme (DCPP) has a total of one hundred and twenty-seven (127) tractors, i.e. roughly one (1) tractor per constituency. Additionally, a total of one hundred and sixty-four (164) contractual tractor drivers were recruited and trained in basic tractor and implement operation and mechanics.

During the period under review, several fertilizers were made available to farmers in all crop growing regions. This includes NPK, Urea, Ammonium Sulphate, MAP and LAN, while a total of one hundred and sixty (160) tons of fertilizers were sold under subsidy to five thousand and fifty eight (5058) households, comprising of two thousand, eight hundred and thirty (2830) females' and two thousand, two hundred and twenty eight (2228) males.

One hundred and fifty nine (159) on-farm demonstrations for both livestock and crops were conducted in all 14 of the country and were attended by 5253 farmers, of which three thousand, one hundred and fifty two (3152) were females and two thousand one hundred and one (2101) were males.

The Ministry through its Directorate of Veterinary Services further successfully carried out its mission during the year under review; by maintaining existing markets for livestock and livestock products and establishing new markets in Hong Kong and United States of America. However, the severe drought conditions experienced across the country caused significant livestock losses.

Moreover, Namibia was declared free from Lung Sickness (CBPP) to the south of the Veterinary Cordon Fence and was granted Negligible Risk Status for Mad Cow Disease (BSE) for the whole country by the OIE World Assembly of Delegates in May 2016. Namibia continued implementing the Foot and Mouth Disease and Lung Sickness Endorsed Control Programmes, which are road maps for achieving FMD freedom in the protection zone and CBPP freedom in the entire Northern Communal Areas (NCA).



Mass vaccinations of animals against diseases such as Foot and Mouth Disease, Lung Sickness and Rabies were carried out during the year, and a total of eight hundred and ninety seven thousand and one hundred and ninety two (897 192) cattle were vaccinated against FMD in the infected and protection zone with a coverage of 81.86%. Meanwhile, nine hundred and eighty one thousand and forty two (981 042) cattle were vaccinated in the NCA against Lung Sickness with coverage of 77%.

The Ministry, through the Division of Crop Research and Production, produced eighty (80) tons of foundation seed and one hundred and eighty (180) tons certified seed of strategic staple grain and legume crops (Cowpea, Pearl millet, Sorghum and Maize). The certified seed were distributed to farmers in crop producing areas through subsidy or as free seed. Furthermore, the Ministry and IAN SAU jointly conducted trials and successfully hosted the first ever Asparagus harvesting day at the Omahenene Research Station in Omusati region.

It is pleasing to report that during the period under review, thirteen (13) bursary holders successfully completed their studies at different levels as follows: Diploma in Adult Education and Community Development (2); Diploma in Civil Engineering (1); BSc Civil Engineering (1); BSc. Environmental Health (1); BSc. Hons Food Science (1), MSc. Food Science (1), MSc. Forestry (1), MSc. Industrial Biochemistry (1), MSc. Information Technology and Business Computing (1), MSc. Microbiology (1) and BVSc Veterinary Medicine (3).

Also during the year under review, eighty three (83) Drilling Permits were processed, of which eight (8) were rejected, thirty (30) Groundwater Abstraction Permits were also processed, of which ten (10) were rejected, and seventy nine (79) renewal permits were processed and approved.

The Namibian UNESCO Water Sector Support Project (NUWSSP) Framework document was finalized in August 2016. The project consists of three (3) components, namely capacity building; integrated flood and drought management plan, and a pilot project in the CEB. The capacity building component is well developed and on track with the Master's Program in Water Resource Management, which commenced in 2016 at NUST, and the development of the UNAM Master Program Curriculum has been completed and was implemented in July 2017.

A new project to assess the impact of the Neckartal Dam on the Fish River commenced in October 2016. Wetlands and water resources quality in these wetlands remain fairly good with the Orange River showing some slight deterioration, especially in the dry season.

The Ministry and its cooperating partners in the crops and food security monitoring assessments continued with its objective of providing information and advice to decision makers on issues related to early warning and food security. This was achieved through assessing the crop and food security situation as well as the availability of agricultural inputs at regional and household levels. Three agro-assessments in seven major communal crop growing regions were successfully conducted during the period under review, and reports thereof with recommendations were produced and disseminated to decision makers and stakeholders for possible interventions.

In addition, the changes in the household food security, as well as livestock and grazing conditions were equally assessed. As part of food security monitoring, the assessment also looked at the household food availability and access. The result of this assessment indicated that, availability of basic agricultural inputs and services were satisfactory and enough to start the season.



During the period under review, Co-operative businesses were involved in economic activities such as livestock marketing, crop production, sewing and tailoring, savings and credit, small mining, marketing of semi-precious stones, arts and crafts, karakul carpet weaving, mahangu marketing, seed multiplication and certification, provision of agricultural inputs such as seeds, fertilizers and ploughing services, as well as first level oil processing from indigenous plants such as Marula, Kalahari melon and Ximenia.

I therefore would like to extend my sincere gratitude and appreciation to the entire staff of the Ministry of Agriculture, Water and Forestry, the private sector and all development partners for their commitment in serving the Namibian people.

A handwritten signature in black ink, appearing to read 'Percy W. Misika'.

Percy W. Misika
Permanent Secretary



ORGANOGRAM

Top Management of the Ministry of Agriculture, Water and Forestry



**John Mutorwa, MP
Minister**



**Hon. Anna Shiweda
Deputy Minister, MP**



**Percy W. Misika
Permanent Secretary**



DEPARTMENT OF AGRICULTURE DEVELOPMENT





Directorate of Agriculture Production, Extension and Engineering Services



OBJECTIVES

The main objectives of the Directorate of Agriculture Production, Extension and Engineering Services are to:

- Provide Agricultural Extension Services in the form of communication, advisory and training services.
- Promote technology development, adaptation, adoption and information dissemination in the agricultural sector.
- Identify technological needs and requirements in the areas of agronomy, mechanisation, irrigation, animal husbandry, soil conservation, water supply and agricultural structures and implement various programs to address these.
- Contribute to the implementation of relevant national policies.
- Contribute to increased food production and household food security.
- Plan, design and develop agricultural, water and forestry infrastructure and equipment for the implementation of programmes and projects on irrigation, livestock, agro-industry, dry-land crop production, horticulture, marketing and storage of agricultural products.
- Provide plant health services and ensure conformity to regulations and policies on plant and animal health, agro-chemical and the quality of animal fodder for enhanced production and marketing in a safe environment.

The Directorate of Agriculture Production Extension and Engineering Services are comprised of the following two divisions: Agricultural Extension Services and Plant Health and Engineering Services. The major achievements of these divisions are outlined below.



DIVISION OF AGRICULTURAL EXTENSION SERVICES

MAJOR ACHIEVEMENTS

The Ministry continued to provide extension services to the agricultural sector in the form of information dissemination, training, communication, and advice throughout the country using a participatory approach that places responsibilities of the development process in the hands of rural communities.

CAPACITY BUILDING

Training of staff

In order to ensure a well-trained and competent team of field extension staff in the country, staff members received in-service training courses held nationally and abroad to equip them with the necessary skills and knowledge required for effectively addressing the needs of the farmers.

A total of ninety-three (93) extension staff received training on good agricultural practice, hazard analysis critical control point, land subdivision, phytosanitary, dry land crop production, production economics and rangeland management amongst others.

Exposure Trips

The directorate continues to expose staff members to improved agriculture practices and technologies used in various countries. In May 2016 DAPEES and DART staff members were exposed to vocational training systems in Bavaria State, Germany. In July 2017 eleven (11) DAPEES staff members were exposed to land management practices in Beijing, China. In March 2017 numerous DAPEES staff members and other stakeholders were exposed to conservation agriculture practices in Harare, Zimbabwe.

Five (5) farmers from Fransfontein ward visited Bergvallei, a commercial farm in Kamanjab district. The aim was to sensitise farmers on the technology of producing animal fodder by crushing shrubs and bushes. Farmers were also exposed to improved small stock management for Boer goats. In addition, twenty-seven (27) farmers undertook two (2) exposure visits to the Windhoek Agriculture and Industrial Show, to the Hardap Green Scheme project, and to Namibia Dairies.

Training of farmers

The Directorate continues with the provision of training and advice to farmers in order to enhance their capacity to produce healthier crops and increase yields with the aim of reducing food imports and ensuring food security. As such a total of six thousand eight hundred and thirty-one (6,831) farmers were provided with in-service training by field extension staff in collaboration with other stakeholders in the regions. Farmers were trained in various topics with regards to best agricultural practice in crop and animal husbandry, horticulture production, pest control, land preparation, soil fertility, draught animal power, rangeland management, drought mitigation strategies, bush encroachment, record keeping, livestock marketing and livestock management calendar techniques, amongst others.

Farmer advisory services

Farm, field and community Visits

The Directorate continues to promote improved agricultural practices and technologies through farm, field and community visits.

- A total of six hundred and six (606) farms and communities were visited by DAPEES field staff in the regions, reaching a total number of two thousand seven hundred and eighty-seven (2,787) farmers.
- The main purpose of these visits was to provide advisory services, disseminate information and monitor and assess progress on the implementation of projects and farming activities of the Resettled Affirmative Action Loan Scheme farmers (AALS), as well as communal and commercial farmers and villages in the region.



- Amongst others, information and advice was provided to the farming community on the following subject matters; farm planning, grazing evaluation, animal and crop husbandry, marketing of livestock, drought coping mechanisms, conservation agriculture, drought relief incentive schemes, agricultural inputs and services, Agribank loan scheme, vaccination campaign, record keeping, budgeting, and bush encroachment.

Farmer visits to Agricultural Development Centres

Farmers in the regions took the initiative to visit MAWF Agricultural Development Centres (ADCs) and Agricultural Regional Offices to obtain information and advice on agricultural production, inputs and services.

A total of nineteen thousand nine hundred and seventy-six (19,976) farmers, including emerging and commercial farmers, visited the Agricultural Development Centres (ADCs) seeking information and services focusing mainly on agricultural inputs and services, drought incentive schemes, livestock import permits, Agribank loan scheme, phytosanitary certificates issuance, livestock improvement permits, drought mitigation strategies, crop and animal husbandry, livestock disease treatment and prevention, animal vaccination campaign, gardening, livestock supplements and marketing of both crop and livestock and horticulture.

Farmer's Information Days

- Eighty-one (81) information days were organised by extension field staff in collaboration with other stakeholders to sensitise farmers on various agricultural practices in the regions.
- Two thousand six hundred and forty-six (2,646) farmers attended these field days. The topics covered were on drought mitigation, rangeland monitoring, holistic herding, lick supplementation, livestock marketing, animal health, valuation of crops and livestock products, meat cooperation and functions, farming diversification and Dry Land Crop Production Programme (DCPP).

Mass and Print Media

- The DAPEES disseminated information through radio, agricultural newsletters, pamphlets and leaflets in the regions. The information disseminated to farmers was focused on the DCP, handling of vaccines, banned animal feeds, livestock marketing effects of drought to livestock, rangeland management, and pest control measures.
- A total of sixteen (16) leaflets on goat management, sheep scab, animal feed and nutrition were developed and distributed to 306 farmers.

Community Based Organisations

Community Based Organisations play an important role in providing services at a local level and are also an integral part of Government's community service delivery system. In this regard twenty-four (24) CBOs, farmers associations and cooperatives, farmers unions, individual farmers and miners were supported with project proposals, annual marketing calendar development and livestock selection for show display. Hence DAPEES facilitated the formation of farmers' leagues at Uis and Okombahe areas. In addition, a total of twenty-one (21) of the existing CBOs were supported. The Sori-Soris Farmers' Association was assisted with drafting a proposal to solicit drought assistance from Standard Bank Namibia for 280 bags of pellets and 344 bales of grass.

Emerging Commercial Farmers

Technical support and advice was rendered to twenty-seven (27) resettled and emerging commercial farmers. The type of support rendered included pest control methods, minimum tillage or conservation agriculture, farm planning, rangeland management, horticulture production, selection of breeding animals, drought mitigation strategies, farm finances and drought mitigation.



Resettlement farmer competition

The purpose of the agriculture competition is to recognise best practices and achievements by resettled farmers in the country. The prizes encourage farmers to improve on their farm productivity levels. The competition offers farmers in the country with the opportunity to identify any weaknesses and needs they may have for future demand driven programs aimed at improving farming practices. Through this program the working relationship between DAPEES, stakeholders and farmers is improved.

The competition was successfully hosted in four regions. In Khomas the 3rd bi-annual competition was held on 8 October 2016. //Karas, Kunene and Erongo hosted their 1st competitions on 9 September 2016, 19 November 2016 and 27 October respectively.

Agronomic Interventions

The Ministry continues to implement Agronomic interventions such as the Dry Land Crop Production Programme (DCPP) and the Comprehensive Conservation Agriculture Programme (CCAP) and provides support to horticulture production.

Dry Land Crop Production Programme (DCPP)

The DCPP is a highly prioritised Government initiative through Cabinet Decision No. 20th/07.11.06/012, which is aimed at empowering farmers in the Northern Communal Areas (NCAs) of Kavango East, Kavango West, Zambezi, Kunene North, Omusati, Oshana, Oshikoto, Ohangwena, Otjozondjupa and Omaheke regions in order to increase food production and enhance household food security. The objective of the programme is to improve crop production in crop growing regions through provision of subsidised agricultural inputs such as improved seeds and fertilisers as well as the provision of subsidised mechanisation services such as tillage and weeding.

The DCPP has a total of 127 tractors, equal to one tractor per constituency per region. A total of 164 contractual tractor drivers were recruited and trained with 31 Ministerial staff members (operator drivers and extension field staff) upskilled in basic tractor and implement operations and mechanics.

An estimated number of 106,798 households (HH) qualify for DCPP and an estimated 32,0394 ha at 3 ha per HH require to be serviced. During the 2016/2017 financial year, a total of 15,707 ha were serviced and a total of 44,141 farmers benefited from at least one of the subsidised input services (seeds and fertilisers) as well as services such as tillage, ripping, planting and weeding.

The MAWF has entered into an agreement with the Agro-Marketing & Trade Agency (AMTA) and the Regional Councils in the implementing regions in order to accelerate the procurement of seeds and the payment of private tractor and draught animal power owners and weeding groups.

The DCPP subsidised Inputs and Services for the period 2016/2017 is as follows:

Land preparation

The DCPP land preparation services include the subsidised mechanised tillage services rendered to farmers through disking, ripping and planting using GRN tractors and implements as well as the use of private tractors.

During the period under review a total 10,517 (5,566 female and 4,951 male) headed HH benefited from at least one of the subsidised services such as tillage, ripping or planting. In addition the programme serviced a total of 15,707 ha.

Weeding subsidy

During the period under review, a total of 2,315 (1,466 female and 849 male) headed HH benefited from the weeding services. A total of 4,531 ha was weeded.



Seed subsidy

The seeds availed under the DCPD during the period under review are comprised of pearl millet (mahangu) and maize seeds. A total of 132 tons of pearl millet (mahangu) and 32 tons of maize seed were sold under subsidy to 26,251 HH (16,011 females and 10,240 males). The seed for cowpea and sorghum was not locally available and could therefore not be availed during the period under review. Cowpea is an important rotational crop and any lack of such seed locally defeats the purpose of promoting Good Agriculture Practices (GAP) and the Comprehensive Conservation Agriculture (CCAP) principles.

Fertiliser subsidy 2016/17

Fertilisers availed during the period under review include NPK, Urea, Ammonium Sulphate, Map and LAN. A total of 160 tons of fertiliser was sold under subsidy to 5,058 HH (2,830 females and 2,228 males). Almost all regions have reported available stock of fertiliser at the end of the cropping season. The stock is sufficient to be used in the next cropping season while the process for the procurement of new fertiliser stock continues.

Challenges

- **Lack of tractors and limited cash flow**
The current lack of tractors and limited cash flow cannot compete with the short, highly variable rainy season in Namibia due to the high demand of ploughing services. As a result, fewer hectares are ploughed and less farmers supported.
- **Lack of improved seeds available locally**
Both cereal and legume seeds are lacking locally. Seed availability remains a challenge for cowpea, maize and sorghum. Although mahangu seed is produced locally, the volume produced is far less than the demand.
- **Delays in servicing and repair of tractors**
The servicing and maintenance of tractors and implements remains a challenge due to the frequent unavailability of spare parts locally. As a result, fewer tractors are availed, leading to fewer hectares ploughed and less farmers supported.

Comprehensive Conservation Agriculture Programme (CCAP)

CCAP is promoted in all the 14 regions in the country with the aim of improving crop production, soil fertility, and to mitigate against low and variable rainfall thus creating climate resilience for both communal and commercial farmers. 9 Tractors and 5 walking tractors were procured for the implementation of CA in the Country through the Sustainable Management of Namibia's Forested Lands (NAFOLA), the Scaling up Community Resilience to Climate Variability and Climate Change in Northern Namibia (SCORE) Project, Food and Agriculture Organisation of the United Nation (FAO), and the Adaptation of Agriculture to Climate Change in Northern Namibia (ACN)-GIZ.

Achievements during the period under review:

- Successfully mobilised external resources (N\$45 million) from GIZ, SCORE, NAFOLA, FAO and CAN to support MAWF with the implementation of CA.
- Established seven additional regional CA forums in Kunene, Omusati, Otjozondjupa, Omaheke, Ohangwena, Oshana and Oshikoto.
- Successfully hosted CA regional forums in ten regions for planning, implementation and monitoring of CA activities.
- Lead farmer approach adopted and document developed.
- 227 Lead farmers were identified and capacitated.



- A total of 398 farmers were trained in CA practices through workshops, demonstration and field days.
- A total of 70 farmers are practicing CA.
- Development of CA training manual for farmers and staff initiated.
- Developed standards and guidelines for CA monitoring and evaluation initiated based on international FAO guidelines.
- Procured a variety of CA equipment, including tractors, implements and tools.
- Secured and conducted on-farm and on-station demonstration and field days on CA practices.

Horticulture Production

In its quest to contribute to increased food production, improved household food security and employment creation, the Ministry continues to support the existing and newly established gardens by providing training and technical advice to farmers and communities in the regions. This extension of support is very important to farmers and the communities at large as it provides them with the necessary encouragement and support they need to enable them to produce food for their livelihood and to generate an income. In this regard, four hundred and fifty-four (454) existing backyard and community gardens were visited to assess progress and to provide information and training regarding crop husbandry, horticultural production and marketing. Furthermore, a total of twenty-one (21) new gardens were established.

Livestock Production

Small Stock Development and Distribution in Communal Areas (SSDDCAs)

40 Beneficiaries received 840 goats from the Small Stock Development and Distribution Project in the Kunene and Oshana regions.

MAWF Ram and Bull Support Scheme

The scheme was not implemented during the period under review due to a lack of livestock caused by drought conditions.

Swakara Scheme

The scheme was not implemented during the period under review because of a lack of livestock due to drought. However, commercial breeders submitted their pedigrees at DAPEES offices in //Karas to facilitate the selling of quality breeding rams to farmers. Ten (10) farmers were assisted in selection of suitable breeding rams from fifteen (15) pedigrees that were received from four (4) different suppliers/breeders.

Poultry distribution and development of small scale farmers

A total of four thousand nine hundred and thirty-six (4,936) day-old chicks were distributed to 250 beneficiaries in Omusati, Omaheke, Hardap and //Karas regions in order to improve household food security.

Livestock Marketing

Auction Events

One hundred and fifty-one (151) livestock auctions took place countrywide, whereby on average four thousand seven hundred and ninety-four (4,794) cattle and nine thousand nine hundred and thirty-seven (9,937) small stock units were sold with a turnover of more than N\$21,593.692 million per auction for both large and small stock.

1.2.1 On-farm trials and Demonstrations

On-farm demonstrations for both livestock and crops serve as one of the most effective extension methods to train and demonstrate to farmers how to perform manipulative operations and learn by doing so.



Consequently, one hundred and fifty-nine (159) on-farm demonstrations for both livestock and crops were conducted in all regions within the country with five thousand two hundred and fifty-three (5,253) farmers attending.

The demonstrations focused on crop and livestock husbandry, land preparation, conservation agriculture, micro-drip systems, uterus prolapses, grazing planning, supplementary feeds and licks, weed control, horticulture production, and fertiliser application, amongst others.

Plant Health

The Division carried out compliance inspections for agricultural inputs on retailers, farm storage facilities and distributors in order to establish whether the agricultural inputs are registered and safely stored.. Furthermore, the Division continued to carry out phytosanitary inspections on farms that are exporting crops in order to ensure that production procedures conform to international standards.

- The Division carried out compliance inspections on retailers, farm storage facilities and distributors, with 12 facilities for pesticides, 12 facilities for fertiliser and 12 for farm feeds being visited. The compliance inspections examined whether the agricultural inputs are registered and if the storage and handling thereof is compliant with the required standards. The Division has also introduced a permit system for all agricultural inputs. The purpose of the system is to ensure that the establishment, selling and storing of inputs are licensed and that products are fit to sell before importation is authorised. A database of registered and imported pesticides, fertiliser and farm feeds was compiled and updated for traceability purposes.
- Six hundred and sixty-one (661) new registrations were done for fertiliser, farm feeds and agricultural remedies and three thousand one hundred and ninety-four renewals (3194) were completed. An amount of N\$ 1,721.900 was generated from registration and renewal of fertiliser, farm feeds and agricultural remedies in line with Act 36 of 1947.
- Four thousand one hundred and sixty-three (4,163) phytosanitary certificates, two thousand eight hundred and sixty-one (2,861) import permits and seven hundred and ninety-seven (797) in-transit permits were issued for the exportation and importation of plant and plant products. An amount of one million one hundred and eighty-four thousand nine hundred and ten Namibia Dollars (N\$1,184.910) was generated from the issuance of phytosanitary certificates and import and in-transit permits in line with the Plant Quarantine Act 8 of 2008.
- The division continued to implement a project funded by FAO for the African Solidarity Trust Fund (ASTF) for the purpose of strengthening controls of food safety threats and reducing plant and animal pests and diseases for increased agricultural productivity and trade in Southern Africa. The project covers five sectors, namely; plant health, animal health, food safety, forestry and fisheries and aquaculture. Inspectors were trained in pests and diseases for National entry points. A Training of Trainers (ToT) course was conducted with various stakeholders ranging from AMTA, Plant Health Inspectors, Customs, Small Scale Traders (Cross border traders), Extension and Foresters. The training was aimed at educating participants on the general procedures of inspecting, duties/responsibilities of inspectors, linkage of stakeholders, familiarisation of various permits, basic identification of pest and diseases and building national capacity in regard to compliance with SPS measures. Thirty-nine (39) inspectors were trained.
- A Training of Trainers (ToT) workshop was conducted with thirty-seven (37) participants attending. Participants were trained in surveillance, sustainable agricultural practices, management of pesticides, principles of systematic, identification, biology, and ecological and economic impact, and management on identification of nematodes. A baseline study was conducted on plant health gaps and the report has been submitted. Plant health staff members were capacitated by attending



Sanitary and Phytosanitary (SPS) workshops fully funded by the Southern Africa Development Community Secretary which took place in different African Countries. The workshops focused on building capacity on effective implementation of SPS measures to facilitate the safe intra-regional and international trade among States.

- Detection surveys have been carried out throughout the country to determine the presence and distribution of the Asian Fruit Fly. To date the division has deployed five hundred (500) serviced traps across the country as part of control measures against the pest and monitoring is ongoing every six weeks. As part of this project, a training workshop on Epizootic Ulcerative Syndrome (EUS), including: biology, pathology, diagnostics and design of an active surveillance programme was conducted in Lusaka, Zambezi. In addition, a regional training workshop on Phytosanitary Capacity Evaluation was held in Lusaka, Zambia and a staff member from the division participated in the workshop. A National Project Technical Committee with various stakeholders (food safety, animal health, plant health and forestry) was established during the inception workshop. The committee is steering the activities of the project within the country. Phytosanitary Capacity Evaluation (PCE) was conducted whereby six modules were completed.
- Two hundred and forty (240) applications were processed since April 2016 for the subdivision of Agricultural Land under the provision of Act 70 of 1970. A total of one hundred and eighty (180) applications were recommended for approval and sixty (60) applications were declined during the period under review.
- A total of one hundred and twenty (120) fruit fly surveillance visits were conducted in Otjozondjupa, Omusati, Oshikoto, Oshana, Zambezi, Kavango East & Kavango West, Hardap and //Karas regions.
- The Division has submitted a proposal which was approved by the European Union under the Trade Related Facility Project which will avail ninety three thousand Euros (EUR\$93,000). The allocated funds will assist the country in dealing with obsolete pesticides which are a problem to human and environmental health, and will facilitate the registration and maximum residues level surveillance as well as capacitate building on laboratory testing facilities for pesticides and other residues.

Capital Projects

Construction of ADCs

The Tubuses ADC in Kunene Region and Onamutayi ADC in Oshana Region was completed.

Development of Agricultural Technology Centres

Construction of Agricultural Technology Centre at Ongwediva has been completed, while the installation of equipment is still ongoing.

Small Stock Development and Distribution in Communal Areas Project (SSDDCA)

A total of 840 goats were distributed to 40 beneficiaries in Kunene and Oshana regions during June 2016. Only N\$696,000 was utilised for the project with the remaining funds diverted to the Neckartal Dam.

Construction of Marketing Facilities (Auction kraals)

One (1) auction kraal was constructed at Anker in the Kunene Region during the period under review.

Establishment of Plant Health and Bio-security Laboratory

The bulk earthworks are 80% complete. The project funds were reallocated to Neckartal Dam.



AGRICULTURAL ENGINEERING

Green scheme

- Development of 300 ha at Etunda phase 7 and 8 is completed.
- Completed 10 ha x 10 small scale farmers' plots, houses, pump stations and irrigation systems at Musese.
- Development of 370 ha Mashare Irrigation Scheme Phase II and electrical work is completed.
- Construction of employee's houses at ORIP Green Scheme Project is completed, while the sewage and water reticulation is 80% complete.
- Civil work for the upgrade and additions to water supply at Uvhungu-Vhungu is 100% complete.
- Construction of the shades and new buildings for the dairy farm at Uvhungu-Vhungu is 90% completed.
- Construction of milking parlour, water supply, new buildings, greenhouses and low and medium voltage electrical supply at the Uvhungu-Vhungu Irrigation and Dairy project.
- Debushing and fencing work at Katima farm and Liselo project has commenced.
- Completed the construction of Okongo Silo in Ohangwena.
- Completed construction of the equipment and fertiliser sheds, guard house, fence, change room and chemical store at Kalimbeza Rice project.

Integrated Grain Storages

- Construction of the 4000MT silos as well as housing and office facilities at Okongo were completed.

National Horticulture Development Initiative

- The construction of bulk earthworks for the Windhoek, Wanaheda Fresh Produce Hub is 90% complete; however the finalisation of the construction is being delayed by negotiations regarding compensation of the house owners affected by the construction.



Directorate of Veterinary Services



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

The DVS successfully carried out its mission during the year under review. Existing markets for livestock and livestock products were maintained and new markets were established in Hong Kong and the USA. However, the severe drought conditions experienced across the country caused many livestock losses.

1. Animal Health Status

Namibia was granted freedom from Lung Sickness (CBPP) to the south of the Veterinary Cordon Fence and Negligible Risk Status for Mad Cow Disease (BSE) for the whole country by the OIE World Assembly of Delegates in May 2016. Namibia continued implementing the Foot and Mouth Disease and Lung Sickness Endorsed Control Programmes which are road maps for achieving FMD freedom in the protection zone and CBPP freedom in the entire Northern Communal Areas (NCA).

The country remained free from Foot and Mouth Disease and Lung Sickness (CBPP) during the reporting period.

2. Restructuring

Although the new DVS structure was approved with effect from 1 August 2014, budgetary constraints have prevented filling of the majority of new posts. Only the division of Veterinary Public Health managed to fill some of their new posts.



The new structure saw an increase of Veterinarians from 61 to 85, Animal Health Technicians (AHT) from 121 to 211 and Veterinary Hygiene Inspectors (VHI) from 73 to 116. In order to strengthen bio-security measures and ensure that sanitary and phytosanitary conditions are met at ports of entry into Namibia, the new structure introduced 87 posts of Agricultural Inspectors.

In order to strengthen management at a higher level, the Divisions Diagnostics and Research and Animal Disease Control now have two Deputy Chief Veterinary Officers. The total number of staff increased from 737 to 1,174. Recruitment of personnel in the remaining posts created by the restructuring exercise will be completed over the next two financial years.

3. Infrastructural development

DVS is currently undertaking massive investments in capital projects throughout the country. These projects fall under five broad categories:

- (i) The Construction of Veterinary Clinics, Offices and Accommodation including Check Points along the Veterinary Cordon Fence.
- (ii) The Development of Plant and Animal Health Inspection Centres at Border Entry Points.
- (iii) Beef value chain development in the Northern Communal Areas.
- (iv) The Improvement of Animal Health and Marketing Services in the NCA.
- (v) Extension of the Central Veterinary Laboratory (CVL) and the planned construction of Ondangwa Veterinary Laboratory and State Veterinary Office.

Progress was as follows:

The construction of the Chief Veterinarian, Central and Traceability offices in Windhoek is underway.

The construction of a State Veterinary Office at Okahao, offices and staff accommodation at Tses, in the // Karas region and at Okalongo, Ruacana, Ndiyona and Ncaute is in progress.

Construction of staff accommodation, offices and a canopy commenced at Rooidag, Tsintsabis, Oshivelo and Werda Gates along the Veterinary Cordon Fence (VCF).

A total of four drive-through disinfection facilities at Oshivelo, Tsintsabis, Mururani and Werda Gates were constructed. These facilities will go a long way in alleviating traffic congestion at these Gates by facilitating speedy disinfection of vehicles during disease outbreaks in the NCA's, especially Foot and Mouth Disease. Veterinary fences, which play a major part in preventing the entry or spread of animal diseases, have been upgraded, including the electrification of strategic sections of the Namibia-Botswana border and internal fences. Further work will be undertaken in the next financial year.

The construction of offices, staff accommodation and animal handling facilities at Oronditi, Swartbooidrift, Wenela, Kasamane, Mahenene, Dobe and Katwitwi borders is underway.

The construction of an abattoir and cold storage facilities at Rundu is also underway..

The Zambezi Regional Council availed land to MAWF at Bukalo Village Council to erect an abattoir, cold storage facilities and a meat processing/cooking facilities for value-added products. This project has been handed over to the Meat Board of Namibia for implementation.

A ground-breaking ceremony was held for the construction of the Veterinary Laboratory and State Veterinary Office in Ondangwa, with good progress on this project being made.

The site for construction of the Eenhana Research Laboratory has been identified and fenced-off.



4. FMD and CBPP Freedom Project

Implementation of the project commenced following the OIE endorsement of the FMD and CBPP Control Programmes in May 2015. The OIE approved the annual reconfirmation of the FMD and CBPP Control Programme submitted in March 2016. Further reconfirmation reports for these endorsed control programmes were submitted in November 2016. These are progress reports based on the implementation plan of the FMD and CBPP Freedom Project.

5. Bilateral Cooperation and Trade

Namibian animal and animal products (including game products) continue to have export market access to the European Union, Norway, Switzerland, South Africa, Angola, Zimbabwe, Zambia and Botswana. A series of audits were conducted by current and potential trading partners. The increasingly stringent sanitary demands by our trading partners and the diversification of markets are however putting a strain on our Directorate.

5.1 Republic of South Africa

Bilateral meetings at technical and political levels were held with South Africa to resolve the issue of the stringent new import requirements for export of cattle and small stock to that country which were implemented with effect from 1 July 2016. This development has adversely affected livestock exports, particularly cattle, which require pre-testing for tuberculosis and brucellosis (if animals are not vaccinated against brucellosis), among other diseases, prior to export.

5.2 USA

The United States Government finally approved the Inspection Health Certificate for export of deboned beef from Meatco, the abattoir in Windhoek.

5.3 European Union Audit

The last EU audit was conducted in 2013. While there are no indications of an EU audit to be conducted this year, all the necessary preparations are being made in anticipation of the next audit.

5.4 China

Although a team of auditors from China came for inspection in January 2016 and approved exports of bone-in beef from Meatco, exports have not started due to the outbreak of Lumpy Skin Disease in parts of Omaheke and Otjozondjupa regions from July to September 2016.

5.5 Hong-Kong

A team of auditors from Hong Kong Veterinary Authority visited the country in February 2016 to assess animal health controls and were subsequently satisfied. The Meatco Windhoek and Okahandja abattoirs were approved for export of bone-in beef to Hong Kong. Namibia has since exported one consignment of beef to Hong Kong and passed the necessary tests in that country.

5.6 Russia

Namibia has been approved to export beef and lamb to the Russian Federation. Approved model export certificates with special security features were delivered to the Russian Federation for distribution to ports of entry, and exports will commence soon.



5.7 Namibia/ Angola Cooperation

Namibia and Angola met at Ondjiva in August 2016 and at Ondangwa in September 2016 as part of the Memorandum Of Understanding (MOU) Implementation Committee to review harmonisation activities and budgetary considerations. Angola provided an update of the situation regarding Foot and Mouth Disease and control measures being taken in that country. The two countries agreed to share information on disease surveillance across the common border.

6. Internal Audits

All export abattoirs were audited internally with no de-listings for export to the markets they are listed for. The Namibian Livestock Identification and Traceability System (NamLITS) Office conducted a series of internal audits to district offices.

7. The livestock population

The livestock census figures for 2016 are still being compiled. It is expected that the figures for 2016 will be less than the previous year's figures due to the drought that has affected the country. The annual livestock census conducted in 2015 showed a decline in all species except for poultry. The most likely reason for this decline in cattle, sheep, goats and donkeys is drought, which caused numerous deaths and also forced many farmers to destock. The changes are highlighted in the table below.

Table 1: Livestock Census Summary for 2014 and 2015.

Species	2014	2015	% Change
Cattle	2,882,489	2,770,545	-4%
Sheep	2,044,156	1,973,393	-3%
Goats	1,892,439	1,868,535	-1%
Horses	55,241	47,151	-15%
Donkeys	159,028	148,859	-6%
Pigs	68,710	62,945	-8%
Poultry	3,436,430	4,054,529	18%
Dogs	135,549	129,313	-5%

8. Disease Surveillance

Animal disease surveillance is a major activity of DVS. Routine active and passive surveillance activities such as farm inspections, community visits, ante- and post-mortem inspections at abattoirs, supervision of livestock auctions, export certification and inspection of imported animals and animal products were carried out during the reporting period with relatively favourable results indicated as no major events were observed.

Following the development of NamLITS 2, the Animal Health Declaration database was upgraded. The new form which was developed is being implemented and is now integrated with the FAN meat questionnaire.

NamLITS, which is the backbone of animal disease surveillance, has now been extended to cover the whole country. This system enables Government to maintain accurate records of animal disease surveillance, animal movements, and vaccinations. It also allows for monitoring of breeding programs as well as population dynamics and future projections. During the reporting period 161,515 additional cattle were tagged in the NCA.



The NamLITS team conducted training on livestock identification and traceability both in the NCA and VCF. A total of 65 staff members from DVS received training.

During 2016, 3,274 community visits were conducted and 3,522 farms inspected as shown in Table 2 and Table 3 respectively. Mass vaccinations of animals against diseases such as Foot and Mouth Disease, Lung Sickness and Rabies were carried out during the year. A total of 897,192 cattle were vaccinated against FMD in the infected zone and protection zone with coverage of 81.86%. Meanwhile 981,042 cattle were vaccinated in the NCA against Lung Sickness with coverage of 77.07%.

Table 2: Summary of Community Visits

SV District	Total no. of communities in communal area	Community visits	Number of farmers who attended
Zambezi	154	157	2270
Kavango	1122	1083	6357
Grootfontein	42	84	0
Oshikoto	165	28	717
Ohangwena	217	28	0
Oshana	76	6	0
Omusati	428	1006	8856
Opuwo	228	25	339
Kamanjab	45	52	0
Windhoek	65	0	0
Walvis Bay	56	56	30
Okakarara	301	223	0
Omaruru	293	129	0
Gobabis	93	88	0
Epukeiro	402	112	0
Mariental	63	104	0
Keetmanshoop	219	90	0
Karasburg	3	3	0
Total	3972	3274	18569



Table 3: Number of Farm Inspections Conducted

State Veterinary District	Total no. of farms	Farms inspected	Cattle	Goats	Sheep
Grootfontein	616	445	29682	2534	5182
Windhoek	571	245	15732	2478	13680
Okavhandja	380	340	66342	5279	6815
Otjiwarongo	230	215	11526	1998	2227
Otavi	472	83	16835	4349	2876
Outjo	582	269	15395	13525	4971
Omaruru	666	155	14359	4057	1511
Walvis Bay	26	26	346	1228	304
Gobabis	669	171	36057	10472	45442
Mariental	1303	686	28045	37344	256594
Keetmanshoop	1345	887	27477	42873	231482
Grand Total	6860	3522	261796	126137	571084

The slaughter figures for 2016 are still being compiled. In 2015, 125,991 cattle, 392,117 sheep and 1,869 game were slaughtered under veterinary supervision at seven export abattoirs. The trends in the number of cattle and sheep slaughtered at export abattoirs are shown in Figure 1 and Figure 2 respectively.

Figure 1: Trends in cattle slaughtered

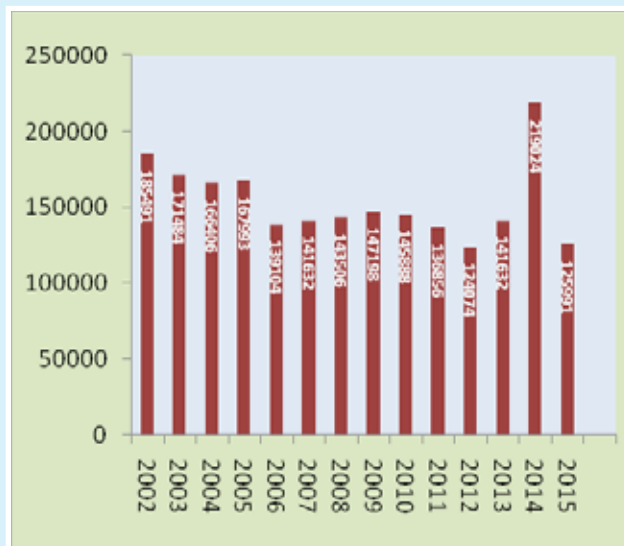
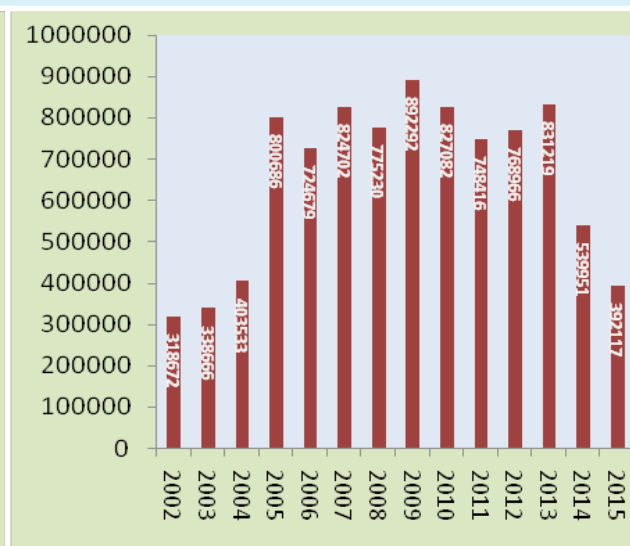


Figure 2: Trends in sheep slaughtered



Major animal disease events reported during the period under review include Rabies and Lumpy Skin Disease.



Rabies

Rabies continues to pose a serious health risk to the public. A total of 308 cases of rabies were confirmed countrywide during the period under review which represents a decrease of 13.5% on last year's figure. Figures 3 and 4 show the distribution of Rabies cases by month and by region and species.

Lumpy Skin Disease

Eleven cases including one death of Lumpy Skin Disease, were detected at 5 foci in Omaheke and Otjozondjupa regions.

Figure 3: Distribution of Rabies cases by month from January to December 2016

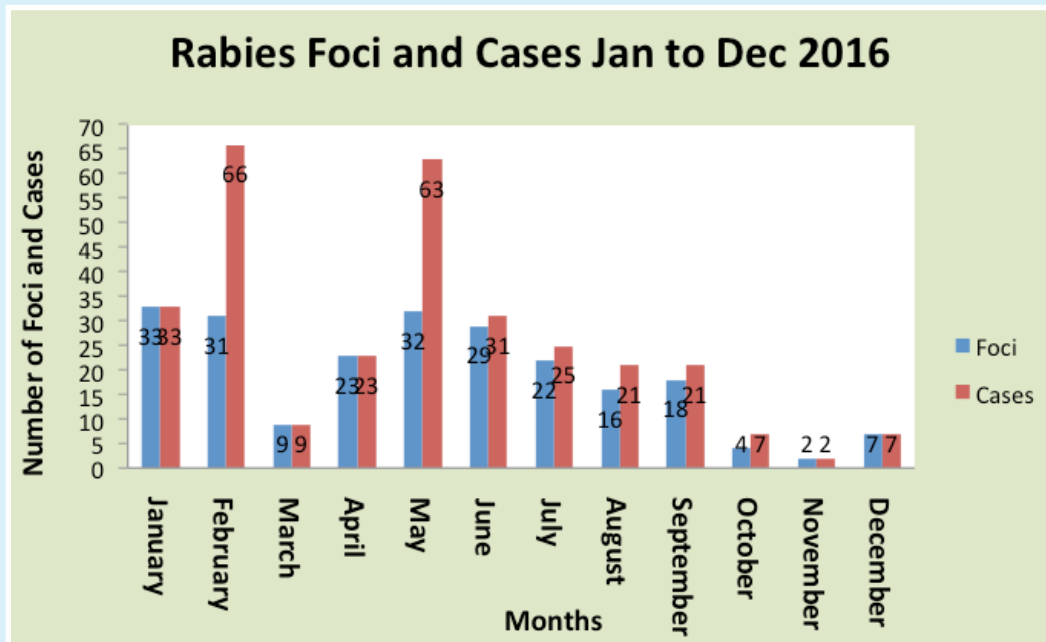
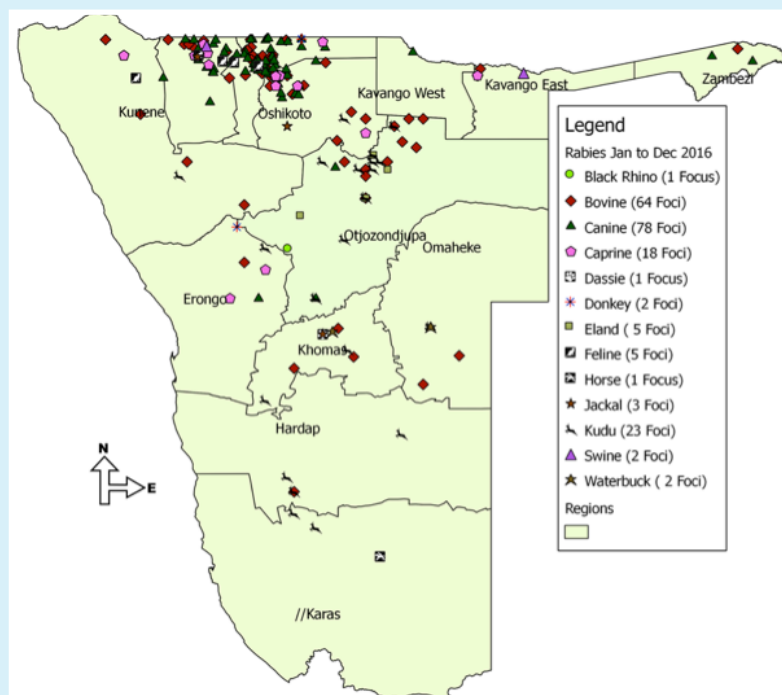


Figure 4: Distribution of Rabies cases by region and species from January to December 2016





Other Reported Diseases

Other economically important diseases reported during the year under review include Dourine, Ovine Brucellosis, Sheep Scab, Orf, Bovine Campylobacteriosis, Bovine Trichomoniasis, Bovine Brucellosis, Malignant Catarrh and Bovine Cysticercosis. A number of physical, metabolic, toxic and reproductive disorders were also reported.



Directorate of Agricultural Research and Development



4.1 OBJECTIVES

- To conduct agricultural research through need-driven, basic, adaptive and strategic research in the communal and commercial farming areas of Namibia.
- To develop and conserve crop and livestock genetic material for current and future use.

4.2 MAIN FUNCTIONS

- Conduct crop and livestock research.
- Conserve and preserve plant and animal genetic material.
- Conduct rangeland management and pasture research.
- Provide livestock performance support services.

4.3 RECURRENT ACTIVITIES

4.3.1 ACHIEVEMENTS FOR 2016/17

4.3.1.1 *Crop Research and Production*

A mutation breeding programme, through the International Atomic Energy Agency and the United Nations Food and Agriculture Organisation, IAEA/FAO Joint Project that involved 150 cowpea, 50 pearl millet and 50 sorghum mutant lines was undertaken during the review period. The project resulted in the selection of promising 21 cowpea, 18 pearl millet and 18 sorghum drought tolerant, high yielding and early maturing mutant lines. These mutant lines are currently under field screening and evaluation. Out of these, a minimum of three (3) per crop variety were selected by farmers for potential release as new varieties in 2017/2018 financial year.



Figure 1: Two sorghum mutant varieties planted at Mannheim Research Station in Oshikoto Region



Figure 2: Two cowpea mutant varieties planted at Omahenene Research Station in Omusati region.

The Ministry, through the Division of Crop Research and Production, produced 80 tons of foundation seed and 180 tons certified seed of strategic staple grain and legume crops (cowpea, pearl millet, sorghum and maize). The certified seed was distributed to farmers in crop producing areas through subsidy or as free seed. Low rainfall during the last cultivation season resulted in a low quantity of seed.

The Division participated in Food Loss and Waste Reduction Assessment in maize and pearl millet sub-sectors within the framework of AU and Global Food Security Initiative.

Three (3) articles were published in international journals, namely “Radio-sensitivity of selected cowpea (*Vigna unguiculata*) genotypes to varying gamma irradiation doses”; “Participatory appraisal of production constraints, preferred traits and farming system of cowpea in the northern Namibia: implications for breeding” and “Selection of novel Cowpea Genotypes Derived through Gamma Irradiation”.



Another two (2) articles were finalised for publication in international journals, namely “Participatory varietal selection among elite cowpea genotypes in northern Namibia”; and “Genotype by environment interaction of elite varieties of cowpea derived through mutagenesis”.

Additionally, two (2) articles were submitted for publication in MAWF *Scientific Journal “Agricola”*. It is also gratifying to report that eighteen (18) research projects on crop improvement, soil fertility improvement, crop diversification and variety evaluation are successfully being conducted.

The Ministry and IAN SAU jointly conducted trials and successfully hosted the first ever asparagus harvesting day at the Omahenene Research Station in Omusati region, as shown in Figure 3 below.



Figure 3: A matured asparagus plant and freshly harvested white asparagus at Omahenene research Station in Omusati region

In collaboration with FAO-Namibia, the Ministry hosted a field day at the Omahenene Research Station on disaster risk reduction/management to support agro -pastoral communities affected by recurrent drought and other natural disasters in southern Angola and Northern Namibia, during which free seed of two (2) legumes (*Vigna unguiculata* and *Lablab purpureus*) as well as three (3) types of grasses (*Brachiata brizahtha cv. Paiata*; *Brachiata brizahtha cv. Marandu* and *Cenchrus ciliaris* also commonly known as blue buffalo grass) were distributed to all the 66 participating farmers.

The Division of Crop Research and Production collaborated with University of Kiyoto, Research Institute for Human and Nature (RIHN), Japan, in hosting a Symposium on Agriculture under variable environments in the North Central regions of Namibia during which three presentations were made.

The Division, with the support of Monitoring of Environment and Security in Africa (MESA), installed an earth observation station for agricultural drought monitoring at MAWF Agro-Climatology Section, and continued with conservation of crop genetic materials for breeding at Research Stations.

4.3.1.2 Rangeland Management Research

- The following achievements were recorded for the Subdivision during the period under review:
- Completed a bush encroachment map for Southern Namibia.
- Completed a grazing capacity map based on the prediction of plant biomass in a regression model with rainfall as the independent variable and corrected with existing bush encroachment data.



- Three (3) research articles were submitted for publication in the MAWF Scientific *Journal "Agricola"*, namely:
 - Assessing the quantity and quality of forage in the dry woodland of the Kavango region
 - The usefulness of combined drought index in Namibia (CDI); and
 - The rainfall-based carrying capacity map corrected for bush density.
- The browsing capacity for 30,000 km² in the Kunene, Omusati, Kavango East and Kavango West regions was determined and recorded.
- A rangeland audit report was submitted to Namibia Agricultural Union, as part of the implementation of the Namibia Rangeland Policy and Strategy.
- Four selected cultivated pastures species were established at Okapya Livestock Development Centre as depicted in Figure 4.
- In addition to the above successes, the Subdivision has completed a study on Rangeland Dynamics at increasing distances from the Kavango River. Browsing and grazing capacity data for three selected areas (at Tondoro, Mashare and Divundu) was recorded, and a methodology for local biomass assessment in collaboration with the University of the Free State was established.



Figure 4: Anthephora on the left Brazgrass on the right established at Okapya LDC in Oshikoto region

4.3.1.3 Large Stock Research

- As part of the conservation effort, DNA collected from hair samples of the indigenous cattle found south of the Veterinary Cordon Fence (VCF) as well as from Kavango East and Kavango West regions, was analysed using the SNP method.
- DNA analysis of the Sanga cattle herd at Sonop Research Station was completed using micro satellites.
- The Subdivision continued with the conservation and promotion of Sanga, Afrikaner, Bonsmara and Simmentaler cattle at Research Stations.
- The Ministry through the Division of Livestock Research and Production conducted public auctions, and as a result 505 registered breeding livestock of which 78 were bulls, 125 cows, 58 rams, 66 ewes, 138 does and 40 goat bucks were distributed to the farming communities.



Figure 5: Some of the cattle breeds being conserved at MAWF Research Stations.

4.3.1.4 Small Stock Research

- A research project on the multiplication of the Gellapper sheep breed, using the original parent breeds (Damara and Dorper sheep) has been concluded.
- More than 150 Swakara farmers were capacitated in Swakara sheep husbandry. Furthermore, 155 Swakara sheep were provided to communal farmers in the Erongo Region and another 165 Swakara sheep were provided to Omaheke, //Karas and Hardap regions through the Swakara Support Scheme.
- Similarly, conservation and promotion of the Namibia Indigenous goats, Gellapper sheep, Damara sheep, Swakara sheep and Boer goats has been ongoing.
- The data collection on the “Breeding a Strain of Vital White Swakara Sheep” was concluded.
- The conservation and promotion of recessive white Swakara and Dorper sheep has commenced at Gellap-Ost in the //Karas region and Kalahari Research Station in the Hardap region.
- Subdivision has commenced with the following research projects:
 - Reproduction performance of the two (2) Damara sheep lines, namely Omatjenne and Kaoko Damara lines; and
 - Meat and carcass characterisation of the Namibia indigenous goats”.



Figure 6: Some of indigenous goats and sheep breeds being conserved at MAWF Research Stations.



4.3.1.5 Livestock Improvement Schemes

- Two (2) research articles were submitted for publication in the MAWF Scientific Journal *"The Agricola"*, namely:
 - Effects of incorporating sun-dried and coarsely ground cactus pear (*Opuntia ficus indica*) and different nitrogen sources in the feedlot diets on the intake and digestibility by Damara wether lambs: Effect on growth and carcass characteristics; and
 - Chemical composition and in vitro gas production characteristics of woody plant leaves and pods of Namibia during wet and dry seasons.
- An article on "Indigenous knowledge and identification of alternative local feed resources as potential feed for goats in the communal farming areas of Namibia" was Published in *Livestock Research for Rural Development Journal*;
- The Ministry, through public auctions distributed 505 registered breeding livestock of which 78 were bulls, 125 cows 58 rams, 66 ewes, 138 does and 40 goat bucks.
- A total of 618 young bulls from 10 stud breeders across the country, including stud animals from five (5) Livestock Research Stations, were tested under the Phase D performance testing scheme;
- The Ministry also tested eleven (11) young bulls from its own Livestock Research Stations under Phase C conditions at Omatjenne.
- Data of 111 animals of emerging commercial livestock farmers was recorded and analysed through a performance testing scheme.

4.4 CAPITAL PROJECTS

4.4.1 UPGRADING OF FARM INFRASTRUCTURE AND IMPROVEMENT OF IRRIGATION SYSTEMS AT TRAINING INSTITUTIONS AND RESEARCH STATIONS

Major achievements for 2016/2017 (N\$16, 250, 000)

4.4.1.1 National Research Botanical Institute:

- Bulk earthworks for the expansion of the NBRI have been completed.

4.4.1.2 Kalahari Research Station:

- Upgrading of oxidation ponds has been completed.

4.4.1.3 Bagani Research Station:

- The construction for the expansion of the Office Block continued and is nearing completion.

4.4.1.4 Okapya Livestock Development Centre:

- A borehole for water supply has been drilled and installed.



8. MAIN DIVISION: PRODUCT DEVELOPMENT, TRAINING AND QUALITY ASSURANCE

RECURRENT BUDGET : N\$ 17,665,000

8.1 OBJECTIVE

To support the development of adequate, well-trained human resources, required to support the sustainable development of the agricultural, water and forestry sectors in Namibia.

8.2 MAIN FUNCTIONS

- Improve managerial, professional and technical skills and competence of staff in delivering results in line with the strategic plan through in-service training.
- Continue with provision of training to the farming communities through short courses.
- Continue with provision of analytical services.
- Continue with product development and value addition for indigenous plants and mahangu.
- Continue with practical and skills oriented training in irrigation farming to potential small-scale irrigation farmers at the Mashare Irrigation Training Centre (MITC).
- Support qualified training to Ministerial staff and the general public in fields critical to agricultural, water and forestry sectors.
- Provide career guidance in agriculture, water and forestry to Secondary School learners.

8.3 RECURRENT ACTIVITIES

8.3.1 ACHIEVEMENTS FOR 2016/17

8.3.1.1 Subdivision Training Development

The Subdivision facilitated the funding of 210 staff members for professional and technical skills development at a cost of N\$1,717,390.

In this regard, staff members attended a variety of courses that included amongst others: Adaptation to Climate Change in Africa, Agricultural Land Management, Biological Analyses of Different Environment Media (Water-Waste Water-Air), Contaminants and Residues in Food and the Environment, Defensive Driving, Feflow Modelling Software, High Performance Liquid Chromatograph Software Installation and Methods, International Federation of Consulting Engineers (FICIC), ISO 9001:2015, Macroinvertebrates Response Assessment Index (MIRAI), Molecular Characterisation and Nutritional Composition of Mutant Germplasm Population, Monitoring Environment and Security in Africa (MESA) System Application and Refresher Course for Veterinary Hygiene Inspectors.

Similarly, 40 beneficiaries were sponsored to continue with their qualified training in critical areas such as Veterinary Medicine, Horticulture, Forestry, Engineering, Animal Physiology, Geohydrology, etc. while 20 MAWF staff members were awarded bursaries to upgrade their qualifications at under- and post-graduate levels in the fields of Environmental Management, Rangeland Management, Resources Management, Food Safety and Quality Engineering, Veterinary Biotechnology, Logistic and Supply Chain Management, Food Science and Geohydrology.

It is pleasing to report that during the period under review, 14 bursary holders successfully completed their studies at different levels, as follows: two Diploma's in Adult Education



and Community Development; one Diploma in Civil Engineering, one BSc in Civil Engineering, one BSc. in Environmental Health, one BSc. Hons in Food Science, one MSc. in Food Science, one MSc. in Forestry, one MSc. in Industrial Biochemistry, one MSc. in Information Technology and Business Computing, one MSc. in Microbiology, and three BVSc. in Veterinary Medicine.

It is also gratifying to report that two DARD staff members who secured external funding successfully completed their studies at Doctoral Level, namely: one PhD in Plant Breeding and Genetics at the African Centre of Crop Improvement, University of Kwazulu Natal, South Africa, and one PhD in Animal Nutrition at Kwame Nkurumah University, Accra, Ghana. Additionally, one staff member secured external funding and is pursuing studies towards a Master's Degree in International Law and Economics at the World Trade Institute.

8.3.1.2 Mashare Agricultural Development Institute (MADI)

MADI has resumed with the training of 12 trainees in irrigation farming at Mashare Irrigation Training Centre (MITC) for possible placement at Green Scheme irrigation projects. The Ministry through the Subdivision Mashare Agricultural Institute (MADI) sold 9,335 chicks/N\$7.00 to 258 beneficiaries which generated an income of N\$65,345.00. Furthermore, MADI produced 17.3 tons of wheat and 17.7 tons of mahangu seed.

The mahangu seed was delivered to Omahenene Research Station for further processing. However, the wheat was of low quality and could not be sold to Millers. Nevertheless, the Subdivision managed to sell some of the wheat grain to MADI staff which generated an additional income of N\$9,800.00, with the rest of the grain used as feed for pigs and poultry as MADI was unable to procure feed due to budgetary constraints.

Moreover, the Subdivision continued with conservation and development of Nguni/Sanga stud as part of the DARD mandate to avail improved animal breeding material to farming communities.

8.3.1.3 Tsumis Arid Zone Agricultural Centre

In its quest to register the Mashare Agricultural Development Institute (MADI) and Tsumis Arid Zone Agricultural Centre (TAZAC) as training providers for the competence-based education and training (CBET) programme in agriculture, the Ministry, through the Division of Product Development, Training and Quality Assurance (DPDTQA), has completed the development of Draft training materials for all the Unit Standards for the Certificate in Livestock Husbandry, Crop and Horticulture at NQF Level 2.

The Centre has also provided training in Basis Fruit and Vegetable production to 13 trainees to be located at the Orange River Irrigation Projects (ORIP) as small scale grape producers. The trainees are currently at ORIP for practical attachment.

Furthermore, TAZAC has commenced with a VET programme in Agriculture (Livestock Husbandry Level 2) with the first intake of 15 learners (10 Males and five Females). The Centre also provided 7,629 chicks/N\$7.00 to 382 beneficiaries which generated an income of N\$53,403.00.



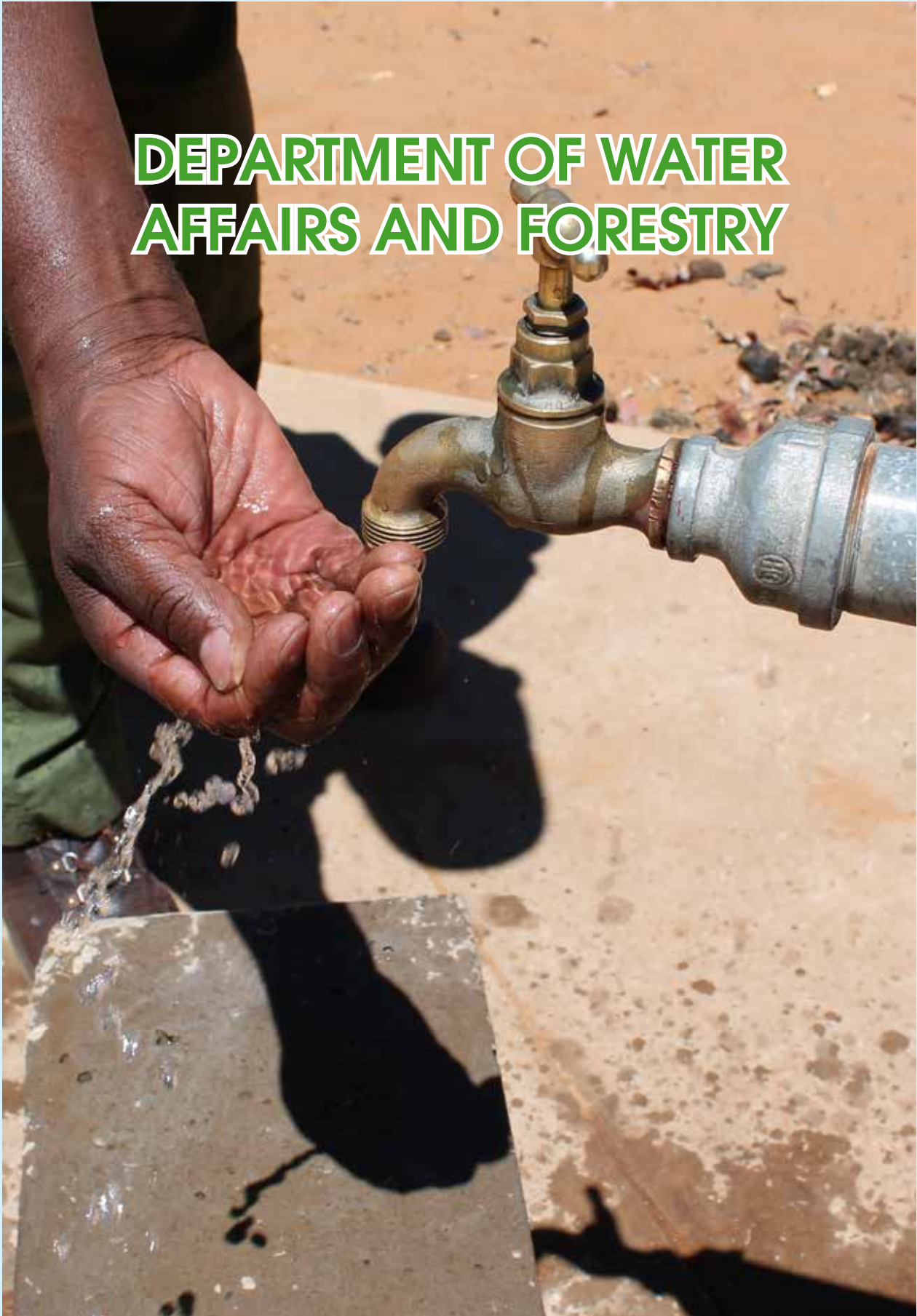
Figure 7: Chicken Breeding stock and chicks at advanced growing stage at Poultry TAZAC Unit in the Hardap region

8.3.1.4 Analytical Services and Product Development (ASPD)

- A draft quality management manual for laboratory quality assurance has been developed according to ISO 17025.
- Efficiency in analysing samples was increased by reducing the number of days from 30 days to 15 days.
- The Subdivision successfully produced 4,447 mushroom spawns which were sold to mushroom farmers across the country.
- Four (4) prototypes of mahangu and sorghum – eembe muffins and cowpeas and red beans crackers as well as juice and jam prototypes from monkey orange (*Strychnos spinosa*) were developed.



DEPARTMENT OF WATER AFFAIRS AND FORESTRY





Directorate of Water Resource Management



INTRODUCTION

The Directorate of Resource Management is one of the three Directorates within the Department of Water Affairs and Forestry. The Directorate is guided by the Water Resources Management Act of 2013 and the National Water Policy White Paper 2000.

OBJECTIVES

- To promote sustainable socio-economic development through effective management, control and use of water resources and securing equitable access of water resources to all sectors of the Namibian population.
- To act as guardian over the water resources of Namibia, administering water legislation, controlling water abstraction and facilitating the equitable allocation of water resources to all users.
- To assume the responsibility for determining the potential of the water resources of Namibia and to implement measures to ensure the protection and sustainable utilisation of water resources in the country.
- To execute strategic water resource development planning as well as regulating and controlling activities in the water sector.

ACHIEVEMENTS GEOHYDROLOGY

Namibia depends principally on groundwater resources, a resource that is highly variable and unevenly distributed within the country. Its occurrence is dependable and associated with the underground rock types varying with the geological and hydrogeological setting. There are very few places where the sustainable abstractions of groundwater in high volumes are favourable, but fortunately few places occur where no groundwater can be found.



The objective of the Division is to investigate and manage the groundwater resources of the country, thus ensuring sustainable use of the national groundwater resources. Through the following activities the Sub-division aims to abide by its functions.

Groundwater Monitoring

Groundwater Database

The GROWAS database has been upgraded to the new version of the database, GROWAS II. Master stations for groundwater were identified and correlated with Master station data within GROWASII to produce reports. Development of templates for entering data into GROWASII and debugging of the system continues. Staff members attended two training sessions on the use of the system and various models in the database.

Borehole (Down-the-Hole) Camera

The Down-the-Hole camera for the assessment of borehole conditions has been procured. The equipment has been mounted onto a trailer in order to easily conduct inspections on boreholes where there are discrepancies in the results and/or conditions of the borehole's monitoring/production.

Borehole Water Levels and Quality

Long-term, systematic measurement of water levels provides essential data needed to evaluate changes in the resource over time which is used to develop ground-water models and forecast trends. It is also used to design, implement, and monitor the effectiveness of ground-water management and protection programs. Boreholes monitored throughout the country within the reporting period exceeded one thousand measurements in five water controlled areas and high groundwater potential areas. The data is collected and stored in the GROWAS II database.

The measurements were conducted in the following regions: Zambezi, Ohangwena and Omusati, which have boreholes installed with digital loggers while Kunene, Otjozondjupa, Oshikoto, Khomas, Erongo, Omaheke, Hardap, and //Karas regions consist of boreholes measured manually and some installed with digital recorders.

Boreholes where samples were taken for water quality analysis by the Geohydrology staff in conjunction with Water Environment staff have been reduced due to budgetary constraints. Areas where groundwater sampling was done includes the Tsumeb smelter area and the Uranium Province Region (Erongo Region) with regards to the SEMP project. The testing on water quality samples was done on all the new DWSSC boreholes that were drilled in the reporting period.

Licensing and compliance checking

Two hundred and fifty-three (253) licence applications were processed in the reporting period from Khomas, Hardap, Otjozondjupa, Omaheke, Oshikoto, Kunene, Omaheke and Erongo regions. Compliance visits were also carried out in these regions and illegal/non-compliant permit holders were visited and urged to adhere to the permit conditions in order for them to cease with uncontrolled abstraction and use of resources.

Eighty-three (83) drilling permits were processed with eight (8) of them rejected and thirty (30) groundwater abstraction permits were processed, with ten (10) of them subsequently rejected and a further seventy-nine (79) renewal permits approved as depicted in Table 1.



Region	Drilling (rehabilitate, deepen & clean)	Abstraction (irrigation - increase)*	Abstraction (irrigation - renewals)	Lease/ conveyance	Abstraction (bulk)	Authorization of boreholes
Otjozondjupa & Oshikoto	26	14	50	2	3	8
Kunene				1	1	
Omaheke	6	6	4	2	4	5
Hardap	25	10	19		7	1
Erongo	8		6	1	1	5
Khomas	18			1	17	2
Total	83	30	79	7	33	21

Table 1: Summary of groundwater permits

*Application for increased water allocation.

Licence holders contact details were renewed and the coordinates of all boreholes appearing on licences were taken and updated.

Groundwater Investigation and Management

Groundwater Management on the North of Namibia

The groundwater management project in the Ohangwena region allows prompt assessment of the resource status under production conditions. The groundwater investigations in Ohangwena 2 aquifer and establishment of Telemetric Monitoring Station in Ohangwena is on-going.

This project has many successes. A draft document on the Numerical Model has been developed and is presently available, with the final version nearing completion.. The First WEAP (Water Evaluation and Planning) Model is available and will be incorporated into the Decision Support System for the Cuvelai - Etosha Basin (CEB). The Telemetry Monitoring Equipment has been procured and is awaiting installation. The co-operation with the Federal Institute of Geosciences and Natural Resources of Germany (BGR) was provided with an additional budget of Euro 2 million after Namibia/German negotiations. The budgetary allocation has been extended to September 2018 and will further assist in the investigations and finalisation of the project phase.

Scenarios were projected for the DSS and activities include the calibrations based on wellfield, and results from the water production at Eenhana, BGR and DWAF needs to support NamWater in Drilling and implementation of production boreholes in order to obtain operational data for the DSS system. Support of the evaluation and procurement of the De-Fluoridisation Plant at Eenhana is required.

Quantification of Groundwater Sources

Re-modelling and re-quantifying of the Karst and Stampriet Aquifer's progressed well with regards to identifying the method of modelling and drafting proposals and acquiring quotations for purchase of FeFlow groundwater modelling software. Collecting and sorting the data updating and analysis was completed. Training on FeFlow groundwater modelling software was conducted (Phase 1 and Phase 2 Advance Training) and during the training the existing Karst Model was evaluated. Capacity building for assessing and setting up Groundwater models has been done. Ten (10) Staff members (8 Geohydrology; 1 BGR and 1 DWSSC) were trained over two phases of training.



Re-modelling and re-quantifying the Karst and Stampriet Aquifer's will continue in-house with Karst Area A & B2 and Stampriet High Production Area's being prioritised and re-modelled.

Stampriet Transboundary Aquifer System (STAS)

The Groundwater Governance Resources in Transboundary Aquifer (GGRETA) project has been implemented and will have outcomes focused on improving resources knowledge and monitoring based on recognition of the importance and vulnerability of transboundary groundwater resources. The Final Assessment report for Phase 1 was cleared by the member states and validation by high-level government representatives was held at the UNESCO Head Office in Paris, France during November 2016.

In partnership with UNESCO-IHP and the Swiss Agency for Development and Cooperation (SDC) the second phase of the GGRETA Project will continue following from Phase 1.

HYDROLOGY

After a long dry spell that lasted well into the first week of January 2017, Namibia received heavy rains as predicted due to La Niña conditions. The high rainfall resulted in exceptional floods throughout the country and in particular the northern border areas. The heavy rains extended further north in Angola and more flood waves came down in the main Cuvelai River spreading out in the *iishanas* in Namibia.

In February and March the Kavango and Zambezi regions had mainly experienced local flooding as a result of heavy local rains, but these also occurred in the headwaters in the neighbouring countries. At the end of April the floodplains in the eastern part of the Zambezi Region were fully inundated, with only some isolated dry spots remaining. Back in the interior of Namibia, NamWater benefited from floods filling up dams such as Von Bach, Hardap and Naute after a long drought spell.

Mainstreaming disaster management is a priority for the Government, in particular for the floods that are seen to increase in frequency and magnitude in Namibia. This Ministry has an unequivocal and demonstrated commitment in this regard. The expanding network of automatic river flow and rainfall stations (using satellites or cellular networks) reports water levels and rainfall in real-time for early flood warning and monitoring and also ensures reliable records for planning purposes.

An additional 20 CELO fully integrated wireless data logger telemetry instrumentation and ten sensors were acquired and installed at the river flow stations in the Cuvelai-Etoshia, Kavango and Zambezi Basins. ZedNet, an online internet platform was setup to be able to receive data logged from the Cello instruments. More work is being done on ZedNet. Historical data from the hydrological data base Hydstra is being formatted and uploaded on ZedNet so that it can be viewed and accessed online.

During this rainy season flood monitoring, warning and management (such as dissemination of the daily flood bulletin to more than 600 recipients locally, regionally and internationally) was accomplished. Additional information was also obtained from some neighbouring countries such as Angola.

PROJECTS

Namibia UNESCO Water Sector Support Project

The Namibia UNESCO Water Sector Support Project (NUWSSP) Framework document was finalised in August 2016. The project consists of three (3) components, namely capacity building, an integrated flood and drought management plan, and a pilot project in the CEB. The capacity building component is well developed and on track; the Master's Program in Water at NUST commenced in 2016, and the development of the UNAM Master's Program Curriculum was completed for implementation in July 2017. The official announcement and public inauguration of the Joint Management Committee Members (JMC) of the NUWSSP took place on 5 September 2016.



Hardap Flood Study

The report was disseminated and presented to stakeholders. The way forward for implementation was discussed and the following actions were proposed: (i) A real time operations system with a built-in Decision Support System for early warning; (ii) Introduction of more culverts at the downstream road and bridge to assist with the dispersion of the downstream water; (iii) Construction of the flood dyke; (iv) Implement the drainage system/storm water; (v) Channel improvements such as dredging; (vi) Control farming activities; (vii) Control dumping of solid waste into the river; (viii) Small channel dug out; (ix) Enforce Land Zoning policy; and (x) An early warning system for irrigators and municipalities. Respective institutions responsible for these actions were identified and informed accordingly.

Water resources data collection and database systems (HYDSTRA) operational

Staff members of Hydrology Division underwent field training and surveyed Monravia, Tses, Kongola and Altdorn flow monitoring stations. New and upgraded rating formulas were obtained from the survey. However, these rating formulas need to be verified more than once after flood occurrences in order to approve and change them in the HYDSTRA database. Technical staff can confidently install and conduct Dumpy level and GPRS survey as well as perform analysis of data on the HECRAS model. More field work for surveying and flow gauging is required for data collection purposes which can be used in the rating analysis.

Several service trips were undertaken to collect and download river flow data. HYDSTRA database administration and software license upgrades were done, more than 40 data requests were received and handled; 70% of station data edited and archived up to the latest hydrological season; annual training done and ten staff members were capacitated on the HYDSTRA database system through the Kisters RSA technical expert; sketches of the main dams were compiled and variables/components for dam balance models reviewed; data was imported into the national database for surface water data; audits of the HYDSTRA database system and the GIS Lab were done, and a firewall and internet services upgraded.

Surface water technical recommendations

Twenty-three (23) surface water abstraction permit applications were processed, however these included twelve (12) permits which were referred back to Policy and Water Law Administration Division for more details.

POLICY AND WATER LAW ADMINISTRATION

Permits Issuing

The utilisation of the country's water resources was controlled and managed in accordance with existing water legislation and policy. The Directorate issued permits for borehole drilling, groundwater and surface water abstraction and wastewater discharge throughout the reporting period in accordance with the water law. A total of 135 permits were issued in the reporting period as illustrated in Table 2 below.

SAND PERMIS- SIONS ISSUED	DRILLING PER- MITS ISSUED	IRRIGATION PER- MITS ISSUED	INDUSTRIAL AND SEA WATER PER- MITS ISSUED	EFFLUENT DISPOSAL PER- MITS ISSUED	TOTAL ISSUED
3	47	32	17	36	135

Table 2: Number of water permits issued

Legislation

The drafting of the regulations for the Water Resources Management Act 2013 continued. Only highly technical draft regulations such as flood and dam safety and groundwater artificial recharge could not be finalised. These were subsequently outsourced and have since been finalised.



The Natural Resources Accounts for Water

A request was submitted to the Mobilisation Resources Support Conservation of Biodiversity in Namibia housed at MET to assist and equip staff members with further training in the areas of natural resources accounts. Capacity support in this regard is being awaited.

Dr. Jaap Arntzen, a consultant from Botswana working with MET to develop other accounts, was approached for assistance and various background data was provided to him. However, it was pointed out that there were numerous gaps in the data provided which made it difficult for him to compile any meaningful accounts.

WATER ENVIRONMENT

Water quality and wetlands resources investigations

The Division continued with the monitoring and management of ecological and environmental aspects of water resources in the country. Water resources quality monitoring (biomonitoring and physio-chemical parameters) was carried out at the Orange, Kavango, Zambezi and Kunene Rivers.

A new project to assess the impact of the Neckartal Dam on the Fish River commenced in October 2016. Wetlands and water resources quality in these wetlands remain fairly good with the Orange River showing some slight deterioration, especially in the dry season.

However, the system showed some level of recovery from the impact in the wet season. The causes of these changes are related to water quality, habitat and flow changes. The monitoring of infestation of Kariba weed (*Salvinia Molesta*) in eastern Zambezi wetlands continued and other aquatic weeds remains under control.

During the reporting period, NamWater continued with the analyses of water samples collected. The outsourcing of water analyses to laboratories will continue until the ministerial Water Quality Laboratory is fully upgraded and functional. Some necessary instruments for the Laboratory have been bought and existing equipment has been calibrated, but due to budgetary cuts the necessary equipment and consumables are still unavailable. Nevertheless, the process to operationalise the laboratory is on-going. The impact assessment of agrochemicals on ground water quality and quantity in the Karst and Stampriet Aquifers continues. So far no impacts have been observed. The analyses of collected water samples continued during the reporting period.

The consultant from New Point Solution (Pty) Ltd continues to incorporate functionality changes to the system. The project was planned to be completed by end of June 2016 but to date, the developer has not yet finalised and handed over a functional system.

Dundee Precious Metals-Tsumeb (DPM-T), formerly known as Namibia Customs Smelter (NCS) and surrounding areas continue to be monitored on a quarterly basis to assess the impact of smelter activities on the drinking water. The quality of water around DPM-T and Tsumeb town is still within Namibia drinking water quality guidelines. The Technical Committee for the Dundee Precious Metals-Tsumeb (DPMT-TC) continues to discuss issues related to the operations of the Smelter.

The Audit project has completed a proposal for the establishment of a National Institute of Occupational Safety and Health (NIOSH), Terms of Reference for National Soil Guidelines/Standards Development and the Project Phase one (1) Close Audit Report. Inauguration of the commissioning of the Acid Plant is planned for April 2016.

The project is entering Phase two (2) with some of the activities that were audited continuing. For MAWF, the Seasonal Water Quality Monitoring Program and the Development National Soil Guidelines/Standards are the activities that will continue as part of Phase two.



Protection of Water Resources, Efficient Use and Awareness

Pollution control surveys and compliance monitoring continued throughout the year in all fourteen (14) regions. Capacity to operate and maintain wastewater treatment facilities remains a challenge for most local authorities and some industries. There is also no clarity on who is responsible for wastewater treatment facilities falling under some institutions (such as health, education and works) after decentralisation. This dilemma makes pollution control and compliance a challenge and needs to be urgently addressed if pollution is to be prevented.

A significant number of local authorities continue to discharge wastewater illegally without the necessary permit in terms of the Water Acts. This poses another challenge in terms of checks and balances related to discharge and pollution. To date the number of sanitation and water services providers and operations with valid wastewater and effluent discharge permits remains low in all 14 regions of Namibia. There are about 422 places on record currently, of which 71 (16.83%) have valid permits, 153 (36.26%) have expired permits, 77 (18.25%) have never had permits, and 121 (28.68) have applied for permits.

The annual **World Water and Wetlands Day Commemorations** took place from 22 - 23 March 2016 at the Zoo Park in Windhoek, under the theme "Healthy wetlands and innovative water and wastewater management for enhanced livelihoods". The Minister of Agriculture, Water & Forestry, Honourable John Mutorwa delivered the keynote address on this occasion.

The National Water Saving Campaign was launched during the commemoration of World Water Day on 23 March 2017. The campaign which commenced in 2016, will run for the next two years' to raise awareness on water use efficiency and promote responsible water consumption.

WATER BASIN MANAGEMENT

Integrated Water Resources Management and Planning at basin and national level

During the reporting period, a number of activities and projects were implemented towards sustainable use and management of Namibia's water resources, as highlighted below:

- The Directorate through its five (5) Divisions provided technical, administrative and financial support towards the operationalisation of the nine (9) existing Basin Management Committees (BMCs).
- Tsumeb sub-basin office was re-opened in July 2016 since its closure in Feb 2015, after a staff member was transferred to the Hydrology Division.
- Omaruru town was hard hit by a lack of water supply and had to implement water restrictions as an urgent measure to control water supply and to conserve and manage the resource properly. The residents were rationed at times in different suburbs since the water supply system pressure could not reach the whole town. Those with a means of transport had to drive to the only water supply tap which had water continuously throughout the day to fetch water for domestic use. The water restrictions were imposed in November 2016 and were lifted later in March 2017 after good rains were received.
- The Omaruru Basin Management Plan development process by SLR Namibia was successfully completed during September 2016. The Plan was presented to various stakeholders and the reports have been printed and are ready for implementation.
- Cuvelai-Etoshia Basin hosted a seminar focusing on water, environment and sustainable development from 23-24 May 2016 at Oshandira. This awareness raising and educational seminar was well attended by various stakeholder groups including learners, academics, and various leading authorities within the basin. There are plans to host this seminar on an annual basis. Similarly, the Cuvelai-Etoshia basin also hosted a training workshop on wastewater management and permit application procedures, attended by technical officials from local authorities and regional councils.



- In the Orange-Fish Basin (OFB), a meeting was held with key stakeholders towards reviving the Prosopis Project in Gibeon, Hardap region. The OFB has been constantly monitoring sewerage systems overflow within the Keetmanshoop Municipal boundaries and frequently engages the Keetmanshoop Municipality personnel in this regard. These two activities are ongoing.
- A meeting was held with the relevant stakeholders regarding the illegal dumpsite in the Fish River downstream of the Hardap Irrigation Scheme. The Ministry of Environment and Tourism, through the Department of Environmental Affairs, wrote a letter to the Hardap Regional Council on action to be taken towards the removal and discontinuation of the illegal dumpsite in the Fish River.
- The Okavango Basin Office also formed part of the joint patrol in the town of Rundu during February 2017 in the area next to the river reserved for tourism. Awareness was raised on how to sustainably abstract sand without leaving massive holes behind.
- No new basin management committee was established in the reporting period, however efforts have been made to initiate a Basin Management Committee for the Nossob-Auob Basin, which is expected to be established in the next financial year.

INTERNATIONAL RIVER BASIN COMMISSIONS AND RELATED INTERNATIONAL ACTIVITIES

Namibia has a number of bilateral and multilateral agreements with neighbouring countries it shares rivers with.

ORASECOM

The ORASECOM Council and task teams met twice during the reporting period to deliberate on joint management of the Orange-Senqu River Basin as included in the basin-wide IWRM Plan, Strategic Action Plan and National Action Plans.

A matrix of ORASECOM activities was reviewed in conjunction with the Water Environment and Geohydrology divisions. The activities were assigned earlier to countries for follow up and action. The ORASECOM Council and Task Teams met twice during the reporting period to deliberate on joint management of the Orange-Senqu River Basin as included in the basin-wide IWRM Plan, Strategic Action Plan and National Action Plans.

The FTT, Council, and Ministers met and held meetings in December 2016 in Johannesburg, South Africa. A decision taken at one of the meetings was to ensure the speedy finalisation of the Revised ORASECOM Agreement which allows for better organisational structures, from Ministers to Senior Officials, Commissioners and Task Teams.

USAID/IUCN Supported Projects - The commission was involved in community development projects, assisted by USAID, and management was carried out by IUCN. These projects have been running for a period of five (5) years' and ceased in May 2016.

Namibia was involved on the Community development through Invasive Prosopis Species Management in Gibeon, Botswana; in Promoting Community-Led Ecotourism in Khawa, Lesotho; in Range and Wetlands Management in two villages of Ha Kelebene and Ha Tlhaku; and in Support to the Management of the Orange River Mouth in South Africa.

Permanent Water Commission (PWC)

The PWC held regular meetings to discuss progress on the Noordoewer/Vioolsdrift Dam Feasibility Study project. The project is expected to be completed by the end of 2017. Negotiations on the Memorandum of Understanding (MoU) of the principles of cooperation towards a water sharing agreement based on the principle of reasonable and equitable allocation from the shared Lower Orange River will be considered by the two countries at the next bi-National meeting.



Okavango River Basin Commission (OKACOM)

The *Multi-Sectoral Investment Opportunity Analysis (MSIOA)* workshop was held in Windhoek, Namibia during the reporting period. The Multi-Sectoral Investment Opportunity Analysis (MSIOA) is a study of the multi-sector investment opportunities in the Cubango-Okavango River Basin, aimed at providing analytical foundations to assist in defining a possible long-term support strategy for investments within the basin, riparian countries and the Southern Africa Development Community. The project is funded by the Cooperation for International Waters in Africa (CIWA) with technical assistance from the World Bank.

May 2016, Annual OKACOM Week Gaborone, Botswana - The Permanent Okavango River Basin Water Commission (OKACOM) held its 22nd Annual Meeting in May 2016 in Gaborone, Botswana.

The Commission met to review progress at the implementation of its Strategic Action Programme (SAP) which is currently primarily supported by Sweden through support to the Institutional and Organizational Capacity Development of OKACOM phase II, as well as with the GEF/UNDP for the support to SAP implementation and the World Bank through the Multi-Sectoral Investment Opportunity Analysis.

The OKACOM Forum of Ministers meeting was also held back to back with the SADC Water Ministers' meeting in Gaborone, Botswana. The OKACOM Water Ministers approved the relocation of OKASEC offices from Maun to Gaborone where the office is now located.

Zambezi River Basin Commission (ZAMCOM)

Namibia being among the eight riparian states of the Zambezi River Basin, hosted the first ever forum of its kind, the Zambezi Basin-wide Stakeholders' Forum. This forum meeting took place from 27-28 September 2016 at the Windhoek Country Club Resort and Casino. The theme was *"Enhancing Transboundary Co-operation through Stakeholder Engagement in the Zambezi Basin"*.

ZAMTEC also held its extra-ordinary meeting on 06 December 2016 in Maputo, Mozambique. A Meeting of ZAMCOM Council of Ministers and ZAMTEC was convened and attended in Tete, Mozambique from 21 - 23 February 2017 and Namibia as Chair of ZAMCOM presided over the meetings for Senior Officials and Ministers. The meeting, among other matters approved the *Procedures for Notification of Planned Measures*. Annual contribution to the operations of ZAMCOM Secretariat was paid.

Kunene River Permanent Joint Technical Committee (PJTC)

The joint Task Force Committee (TFC) and Committee on Baynes (CBA) met several times during the reporting period to develop draft operation rules and procedures of the Calueque Dam after the rehabilitation.

The Kunene Transboundary Water Supply Project is progressing well with funding from KfW. The Santa Clara and Namacunde/Omupanda distribution network is finalised; the Calueque Village water reticulation and sanitation, main pipe repair and canal off-takes formalisation works has been awarded. The project was launched in January 2017 and will continue for another year.

The Calueque-Oshakati pre-Feasibility study has been completed and recommendations for detailed study of the selected scenario was made.

African Ministers' Council on Water (AMCOW)

Contribution to the Country Report by DWSSC on M & E for Water and Sanitation was made. A payment contribution was made towards the operation of the AMCOW Secretariat.

The 6th African Water Week and AMCOW Technical Advisory Committee (TAC) and General Assembly meeting was attended in Dar es Salaam, Tanzania from 15 – 22 July 2016. BGR supported two staff members from Geohydrology Division, who attended the 6th Water week on July 2016 in Dar es Salaam, Tanzania. A payment contribution was made to the operations of the AMCOW Secretariat.



Cuvelai Watercourse Commission (CUVECOM)

The CUVECOM Agreement was signed on 14 September 2014 in Windhoek. The CUVECOM main office has been established at Oshakati and a satellite office at Ondjiva. A consultancy to carry out a rapid assessment for the water issues in the basin has commenced with funding from GIZ SADC Transboundary Water project.

Southern Africa Development Community (SADC)

The SADC Water Resources Technical Committee (WRTC) was attended in Ezulwini, Swaziland from 17-19 May 2016.

The SADC Water Ministers Meeting as well as the Joint Ministerial Workshop on Energy and Water was attended in Gaborone, Botswana from 16 - 26 June 2016.

The SADC Groundwater Management Institute (SADC-GMI), a regional centre for groundwater under the strategic guidance of the SADC Secretariat, Directorate of Infrastructure and Services – Water Division, in Gaborone, Botswana, was launched on 21 September 2016.

The roles of the SADC-GMI are: (i) to promote sustainable groundwater management and solutions to groundwater challenges in the SADC region through building capacity, providing training, advancing research, supporting infrastructure development, and enabling dialogue and exchange of groundwater information; and (ii) to conduct and support SADC Member States in groundwater research, and serve as a focal interlocutor with national, regional and international groundwater initiatives. The World Bank GEF is funding sustainable groundwater management project in SADC member states, whose members are steering the project.

UNESCO IHP (International Hydrological Programme)

Two staff members attended the 12th KOVACS Colloquium and 22nd Session of IHP Intergovernmental Council Meeting from 13 - 17 June 2016 at UNESCO HQ, Paris, France. Namibia was elected as Chair of the International Hydrological Programme (IHP) Finance Committee.

The Hydrology Division, in collaboration with National Commission for UNESCO (NATCOM), organised a consultative meeting on the establishment of a National Committee for UNESCO International Hydrological Programme (IHP). The Meeting was held on 9 June 2016 at Namibia University of Science and Technology (NUST). The objective of the meeting was to inform stakeholders on the role of IHP and the importance of setting up a National IHP committee.

SASSCAL

Under the SASSCAL Project TASK 014, three field trips were undertaken to the Cuvelai Basin after significant rainfall was received in the catchment area. The main purpose was to do flood monitoring and measure indicators for floods such as velocity, water levels and discharge.

During the first trip (18 - 25 February 2017), the western Cuvelai had by then received significant rainfall and a number of lishana had water, with some flow being noted in others. This presented an opportunity to measure water chemistry at a local level, without significant input from the upstream section of the study area.

Fieldwork in the Angolan section was critical for assessing the watershed between the Kunene and Cuvelai catchment, and significant data and observations were made as a result.



Flood and Drought early warning/forecasting system

The SADC MESA Project donated two stations for Agriculture/Drought and Flood Services Themes. Installation and transmission of satellite data was successful and staff members were capacitated on using the tools and products to assist in flood monitoring and disaster management. Hydrology staff members attended MESA System Application Workshop for Station users from 23-27 January 2017 in Nairobi Kenya. The objectives of the workshop were to understand the data processing principles, to be able to perform some basic and more advanced domain specific operations, to perform some basic customization, and how to use MESA systems for product service delivery.

The African Member States that are parties to the UNCCD (United Nations Convention to Combat Desertification, Ministers, Heads of delegations, and Experts attended the High Level Meeting of the first African Drought Conference (ADC) and adopted the Strategic Framework for Drought Risk Management and Enhancing Resilience, in Africa, which proposed for a Drought Resilient and Prepared Africa (DRAPA) to be implemented at national level guided by the six fundamental principles. The Windhoek Declaration for Enhancing Resilience to Drought in Africa was adopted by the end of the Conference. The importance of incorporating issues of Gender and Youth were also emphasised.

WATER SUPPLY SECURITY

The President, H.E. Dr Hage G Geingob appointed members of the Cabinet Committee on Water Supply Security (CCWSS) with its Technical Committee of Experts (TCE) on the 6 July 2016. Their overall terms of reference is to address the water security in the most affected regions of Namibia (such as the central and coastal areas of the Khomas and Erongo regions), and fast-track solutions to the current water supply shortage, starting with Windhoek.

The Committees, under Secretarial services from DWRM have been meeting regularly, with the TCE meeting held weekly and the CCWSS fortnightly, with frequent reporting. The TCE has since developed and commenced implementation of an emergency plan on how to avert the water crisis in Windhoek and the central areas of Namibia.

A three-phase approach has been adopted:

Phase 1 to address the critical water supply shortage to Windhoek, together with other foreseen shortfalls in the Central Area of Namibia (CAN), over a **period of 17 months from 1 August 2016 until the end of December 2017**

Phase 2 to extend the evaluation and measures recommended for water security in the CAN for **another two years' up to the end of 2019**; and

Phase 3 to examine the future and **long term water requirements of the entire country.**

HUMAN RESOURCES

Staff shortages in some of the divisions within the Directorate of Water Resources Management remains a major concern, especially in the scarce skills in the professions of engineering, chemistry and geo-hydrology. Staff members continue to receive training through Shared Water Commissions and SADC, while other staff members continue to pursue studies in various qualified courses.



BUDGET

The total budget allocation for the fiscal year 2016/17 of **N\$58,343.064** and **N\$50,166,403** was not fully utilised. The development budget accounted for N\$17,513,202 of which *N\$16,350.746* was spent, whereas the operational budget allocation accounted for N\$40,829.862 of which *N\$33,815.657* was spent. Under-spending accounted for about 14% mainly due to cost saving measures imposed by Government. This affected spending on the operational budget and as such, vacant positions could not be filled.

CHALLENGES

A number of projects could not be implemented due to the budget cuts.

The high staff turnover rate and shortage of skills experienced in the water sector has also posed a challenge.



Directorate of Water Supply and Sanitation Coordination



OBJECTIVES

To provide access to potable water supply and improved sanitation services in rural communal areas.

To coordinate urban and rural water supply and sanitation services.

To nationally support the Office of the Prime Minister with the provision of water supply and sanitation services at times of flooding and drought.

ACHIEVEMENTS

2.1 Coordination Activities

Four National Water and Sanitation (WATSAN) Forum meetings were held to coordinate the sector activities.

2.2 Operational Activities

2.2.1 Maintenance of Water infrastructures

The maintenance of more than 5,000 existing communal water points were carried out countrywide.

2.2.2 Private Water Connections

During the reporting period, one thousand seven hundred and thirteen (1,713) private connections were added to the existing seventeen thousand nine hundred and seventy-four (17,974) private off-takes in Ohangwena, Oshikoto, Oshana and Omusati regions. These connections are for households on existing pipeline schemes. This brings the total to-date private off-takes to eighteen thousand six hundred and eighty-seven (18, 687).



2.3 Human Resources and Staff Training

No staff training took place during the reporting period.

2.4 Community Development and Training:

Sixteen (16) Water Point Committees were trained in Kunene and Ohangwena regions respectively. Community awareness-raising on sanitation, health and hygiene education was conducted with participation by 3,322 households in 13 regions.

2.5 Water Supply Subsidy Implementation:

Stakeholder consultative workshops were held in all the clustered regions on the Water Supply Subsidy Policy and Community Based Management (CBM) Strategy. A decision on criteria to be applied for rural households is in progress. The CBM Strategy has been reviewed and drafted.

2.6 The Capital Budget:

The DWSSC 2016/17 appropriated capital budget was N\$ 823,298,680 of which N\$ 823,193,047 was spent. The breakdown against different cost centres is as follows:

- 100% of the Community Based Management vote allocation.
- 100% of the Rural Water Supply Coverage vote allocation.
- 100% of the Implementation of Decentralisation, Constituency Office Construction vote allocation.
- 100% of Construction of Large Dams vote allocation.
- of the Desalination Bulk Water Supply to the Mines at the Coast vote allocation (No budget).
- of the Construction of Dams, Traditional Wells and Pans vote allocation (No Budget); and
- 100% of the Rural and Urban Sanitation vote allocation.

2.7 The Recurrent Budget

The DWSSC 2016/17 appropriated recurrent budget was N\$ 151,372,000 of which N\$ 157,473,314 was spent. An overall expenditure for the DWSSC 2016/17 recurrent budget of 105% has been achieved, which is slightly higher than the allowable variance of 2% under, or over expenditure.

The expenditure per vote at the end of the financial year was as follows:

- Vote 001 (Remuneration) 106%.
- Vote 021 (DSA) 106%.
- Vote 022 (Materials and Supplies) 80%;Vote 023 (GRN Transport) 100%.
- Vote 024 (Utilities) 100%.
- Vote 025 (Maintenance Expenses) 31%.
- Vote 027 (Other Services and Expenses) 99%.
- Vote 101 (Furniture and Office Supplies) 124%; and
- Vote 103 (Operational - including Water Supply and Equipment) 124%.



2.8 Development Activities

The construction of Katima Mulilo – Kongola Phase 2 Water Supply Scheme in Zambezi region is 95% complete, and the network handing-over process is in progress. The construction of the litapa - Okeeholongo Water Supply Scheme in Omusati region is 85% complete. Extension of Ondangwa – Omuntele Pipeline in Oshikoto region is 84% complete.

Picture 2.1(a) Water Supply Scheme Projects



Booster Pump station

Picture 2.1 (b) Water Supply Scheme Projects

Water Storage Tanks



Manifolds System



Water storage Reservoir

Eighty two (82) Water Points were rehabilitated, three (3) boreholes drilled, seventeen (17) boreholes installed and thirty-six (36) short pipelines constructed in 13 regions excluding Khomas region.



Picture: 2.2 litapa – Okeeholongo Water Supply Scheme in Omusati region



Water storage and distribution tanks surrounded by an Elephant protection wall.

The construction of Tses Rural Water Extension Centre (RWEC) in the //Kharas region has been completed. Feasibility studies for the construction of constituency offices in Omaheke (Otjinene and Eiseb); Erongo (Tsubisis, Omatjete and Uis); and Otjozondjupa regions (Tsumkwe and Gam), are also completed.

The construction of sanitation facilities continues to make a significant contribution to the development of sanitation infrastructure in various regions of the country. A total of 257 sanitation facilities were constructed as roll-over's from the previous Financial Year within the Omaheke and Hardap regions.

2.8.1 Neckartal Dam Project – Engineering and Construction

An account of the various milestones achieved at the three main sections of the Neckartal Dam project, namely the Main Dam, Quarry, Abstraction Works and Pipeline is provided as follows:

MAIN DAM

- Completion of the two river diversion culverts.
- Reinforcement concrete in Inlet and Outlet structure up to the elevation level of 752.25 meters.
- Roller Compacted Concrete (RCC) placement for Block 8 – 16 up to 749.6 meter level completed.
- RCC placement works for Block 17 and 18 completed up to 747.2 meters and 744.8 meters respectively.
- RCC Placement for Block 19 - 25 completed up to 742.4 meters.
- Hydro mechanical installation in Intake Tower in progress.
- Foundation preparation, placement of No-Fines Concrete and drilling and cleaning of rock dowel holes for Spillway chutes in progress with 13 steps completed.



- Drilling and flushing of curtain grouting on primary holes in progress in the lower gallery.
- Conventional Vibrated Concrete (CVC) works for Turbine Room Foundation slab in progress.
- Installation of DN1600 pipes in Turbine Room (Items 19A & 19B).

PIPELINE AND BALANCING DAM

- 15 X PN40 Gate valves installed on Air Valve Chambers.
- 12 X PN40 Gate valves and six x Poly propylene pipes installed on Scour Valve Chambers.
- One X PN40 Gate Valve installed on Surge Tank Chamber CH1200.
- Bypass line installed on Isolating Valve Chamber CH3933.

ABSTRACTION WORKS: SEDIMENT TRAP, WEIR & PUMP STATION

- CVC works for Pump Station elevation is 47% completed.
- CVC Casting for Base Slab and Elevation at Sediment Trap in progress.
- RCC Placement at Abstraction Weir in progress.

LABORATORY

- Test on RCC Placement, fresh and hard CVC pours and aggregates in progress.
- Test on Scour Chamber Trench bottom along the pipeline.
- Test on materials in Balancing Dam.
- Test on fresh and hard concrete and RCC.
- Study of mix design.

INSTALLATION / PLANTS

- Crushing Plant, CVC and RCC Batching Plant in operation.
- RCC Conveyor Belt in operation.
- 2 Chiller Water Units in operation.
- Electrical MV distribution in plant area in progress.
- Electrical Connections to Boreholes completed.
- Ice Plant Operational.
- Installation of Tower Crane in Turbine Room in progress
- Electrical line to boreholes operational.

QUARRY

- Drilling for blasting (hard rock for crushing plant).
- Crushing of aggregates.



Picture 2.3 Neckartal Dam Project



Installation of reinforcements at valve chamber after casting, Abstraction weir, pump station and pipeline

2.8.2 Drought Relief

Namibia received below average to average rainfall for the 2015/16 year; but the effects of the drought spilled over late the 2016/17. The Ministry, through the Directorate of Water Supply and Sanitation Coordination (DWSSC) receive some drought support through the Office of the Prime Minister’s Directorate of Disaster Risk Management (DDRM) and assistance from USAID through UNICEF.

The Directorate received N\$ 8,062,21600 from DDRM, of which N\$ 4,108,661 was utilised for the payment of outstanding invoices for the repair of trucks and water tankers; N\$ 2,953,555. 00 for the procurement of emergency water supply material and equipment; and N\$ 1,000,000 was utilised for in-house borehole installations.

Eight (8) Nissan Power Star off-road 6x6 water tanker trucks were donated to MAWF through NamWater by USAID. The total value of the donation was N\$ 12.7 million. The water tanker trucks were received on 24 May 2017 by the Hon. Deputy Minister of Agriculture Water and Forestry.



Some of the Water tankers donated by USAID



3. SPECIAL PROJECTS

3.1 European Commission (EC)

The EU Support to Namibian Water Supply and Sanitation Sector Programme (NAWASA) has been funded under the 10th European Development Fund. A Financing Agreement between the Government of the Republic of Namibia and the European Union was signed in 2011. The Operational Implementation Phase of the programme comes to an end in January 2017.

Total funding disbursed during the five year duration of the programme is € 32,013,126, subdivided into two main categories: € 31,550,000 as budget support and € 463,126 as technical cooperation. Compared to the amount originally committed to the programme, disbursements correspond to approximately 91% for budgetary support and 33% for technical assistance respectively. The main reasons for the partial use of the funds were:

For budgetary support - payments under the variable tranches were reduced, due to an inability to meet the targets for access to sanitation in rural areas, as indicated in the Joint Annual Report for the years' 2012/13 and 2013/14.

For the technical assistance facility - the sector was unable to contract the required services by 9 November 2015, which was the deadline stipulated in the NAWASA Financing Agreement.

The last disbursement, amounting to a total of €7.84 million, of which € 5.5 million for the fixed tranche and of € 2.34 million for the variable tranche, was disbursed by the EU in December 2016, following a request from the Government of Namibia in April 2016.

An expert on sanitation will continue working within DWSSC until December 2016, as part of the technical assistance component of the programme. A new request for the extension of technical support is being prepared, and is to be financed outside of the NAWASA programme under the Technical Cooperation Facility.

3.2 UNITED NATIONS CHILDREN FUND

UNICEF has collaborated on a number of projects within the WATSAN Sector which includes the following:

- UNICEF in partnership with Society for Family Health (SFH) - 648 principals, teachers and cleaners were trained on WASH at various schools throughout Namibia. The 100 School Health Clubs established played a crucial role in hygiene promotion activities at school and community levels. Club members promote hand washing with soap, with drama performances, hygiene promotion sessions and clean-up operations held at the various schools .
- The partnership with the Namibia Red Cross Society (NRCS) continued to support five triggered villages on community-led total sanitation (CLTS). Ondingwanyama, a village that achieved universal coverage on sanitation, sustained and adopted good hygiene practices. Each household has a lavatory with a tippy-tap and handwashing soap or ash nearby.
- UNICEF supported high level participation by Government officials at a Sanitation Learning Workshop held in Johannesburg, South Africa, in April. The workshop provided an opportunity for South-South Cooperation and networking with other countries.



- CLTS Foundation in collaboration with UNICEF Regional Office availed a consultant from Zambia to support CLTS activities through the review of previous CLTS implementation, trained 57 persons (55 government staff members and two staff members from the City of Windhoek) on CLTS, and developed a CLTS program to be implemented by Government. In addition UNICEF supported the drafting of ODF Protocol for Namibia which is under discussion at national level. The ODF Protocol will guide the certification of ODF villages including Ondingwanyama.

3.3 NAMIBIA TRAINING AUTHORITY (NTA)

The Sector Skills Plan developed by the NTA in 2014 concluded that there are significant skills supply and demand gaps within the water supply and sanitation sector. As such, the NTA in collaboration with the GIZ ProVET program, and in consultation with the industry and the Ministry for Agriculture, Water and Forestry (MAWF), embarked on the development of qualifications for future Vocational Education and Training (VET) in the sector.

The sector is significant in terms of providing job opportunities for skilled personnel. Skilled persons would be working in water supply and sanitation goods and service provision, the mining and agriculture sectors, as well as in education and community mobilization, to mention only a few.

Initial industry consultation to establish skills gaps, an occupational map and job profiles took place in August 2013. The initial development of the unit standards and qualifications was benchmarked against qualifications from South Africa, New Zealand, Australia and Scotland.

The proposed qualifications were presented at a national consultation in November 2014. The consultation resulted in stakeholders having major reservations on the completeness of the presented qualifications. Further industry engagement resulted in the Needs Assessment Report on Water and Sanitation.

This was presented to 30 representatives from key stakeholders of the sector during a round table consultation meeting on 10 September 2016 and the information was used to prepare the final draft of the unit standards and qualifications. These have now been approved by the Industry Skills Committee.

The following four qualifications will be submitted in the next Financial Year to the Namibia Qualifications Authority (NQA) for registration on the National Qualifications Framework (NQF):

- National Certificate in Water Supply and Sanitation at NQF Level 2
- National Certificate in Water Supply at NQF Level 3
- National Certificate in Sanitation at NQF Level 3
- National Certificate in Water Supply and Sanitation at NQF Level 4

Graduates from the level 2 courses may be employed as skilled operators, from level 3 as skilled artisans for either the water supply or the sanitation sub-sectors and level 4 as specialist technicians at plants or in education/public mobilisation.

In March 2017 the NTA will commence with the writing of the training program (curriculum) for the qualifications and develop the assessment materials for training. It is expected that NamWater, the Municipalities, The City of Windhoek and possibly the MAWF, at its two training centres, may in the coming years become the main training providers for these qualifications.



Directorate of Forestry



INTRODUCTION

The Directorate of Forestry exists to practice and promote the sustainable and participatory management of forest resources and other woody vegetation, to enhance socio-economic development and environmental stability. The vision of the Directorate is to promote a well-organised forestry sector that is socially, environmentally and economically sustainable while creating significant and equitable wealth and opportunities enjoyed by all Namibians.

The Directorate of Forestry subscribes to the following operational values:

- To continuously develop and improve the knowledge and skills of the Directorate's staff members as the key motivating factor and a precondition for excellent performance.
- In all our dealings with our customers and stakeholders, we will encourage participatory planning. We will therefore focus on satisfying their needs, entertain diverse views and agree on priorities through mutual recognition and in consideration of their knowledge, skills and rights.
- We will act in a straightforward and open manner in our communications and exchange of information, and be recognised as being trustworthy and reliable.
- Our existence is justified by forest resources. Therefore, all our actions are guided by the principles of economically, environmentally and socially sustainable forest management, which is focused on protecting and using our forest resources wisely.
- In all our undertakings, we will strive to increase public recognition of the socio-economic value of forests. We believe that this will encourage and enhance income-generating opportunities, gender equity, equitable sharing of benefits from forests contribute to the reduction of poverty and improve food security and nutrition.



Objectives

The core functions of the Directorate of Forestry is categorised into the following objectives:

- To establish, manage, utilise and conserve forests, including woodlands, for human benefit.
- To provide forestry extension services in the form of communication, advisory and training services.
- To provide robust scientific research support in order to manage and develop the potential of Namibia's forest resources.

ACHIEVEMENTS

PROJECT 1: DEVELOPMENT AND IMPLEMENTATION OF FOREST POLICIES AND LEGISLATIONS.

436 Awareness meetings and workshops were held by regional Forestry staff to sensitise communities on the importance and protection of forest resources and the procedures required to obtain permits. The regional staff conducted farm inspections mainly at the commercial farms having applied for permits to harvest wood for charcoal, firewood, poles and droppers production.

A total of 18,842 permits were issued for utilising forest products, while 104 fines were issued to persons illegally transporting or harvesting forest products. A total of 581 roadblocks, 805 resource inspections and 644 patrols were conducted.

About 18,1976 tons of firewood; 147,575 tons of charcoal; 188 m³ of timber; 324,183 droppers; 64,740 poles, 1,277 woodcarving pieces and 3,810 tons of mopane roots were legally (for which permits were issued) removed from the forests. 238 tons of firewood, 11,075 droppers, 19,692,144 tons of charcoal, and 3631 planks were confiscated from people who were not in possession of the required legal supporting documentation, therefore contravening the Forest Act, 2001 (Act No. 12 of 2001).

An auction of confiscated forest products was held at Outapi Forestry where 603 poles, 559 droppers and 16 bundles of firewood were sold for a total amount of N\$15, 608.00.

A significant number of days were spent on Operation Thunderbird, an initiative by NAMPOL's Anti-Poaching Unit. During the operation, forest patrols and road blocks were conducted in all regions in order to control the illegal harvesting, transporting and marketing of forest and wildlife products and other illegal substances.



Figure 1: Confiscated Wood



Figure 2: Confiscated charcoal at Khorixas

Monthly meetings at regional level were attended by staff members. These meetings were aimed at reporting achievements, establishing ways of developing teamwork in the regions and planning activities. Regional staff members attended several inter-sectoral meetings. A total of 261 RDCC, CDC and CACOC meetings were attended in the region to discuss issues at regional level.

National Arbor Day was celebrated in all regions across the country. The Tree of the Year, *Sterculia Africana*, commonly known as the African Star-Chestnut, was promoted with the theme “Let us invest in our forests to create a climate smart future”. The events were highlighted by tree planting activities that took place at various locations. The Directorate also participated at various exhibitions, shows and trade fairs, such as the Windhoek Agricultural Show, Rundu Trade Fair, Okahandja Tourism Expo, Ongwediva Annual Trade Fair and the Oshakati Totem Expo.



Figure 3: Arbor Day celebration at Oshimbuba JP School



Figure 4: Seedling donation on Environmental Day.

PROJECT 2: COMMUNITY FORESTRY

Community-based forest management is of paramount importance to the forest management in communal areas, where forest resources are shared by inhabitants. In carrying out this mandate, the regions were engaged in preparation and implementing milestones as indicated in the community forestry guidelines, namely developing constitutions, integrated management plans, and by-laws. The Legal Assistance Centre was consulted for inputs on legal issues.

The community forests, including Ondjou, were assisted with developing constitutions and by-laws. Otjituuo, Epukiro, Otjombinde, Eiseb and Omuramba community forests completed the forest resources assessment (inventory). Gazetting dossiers for nine (9) community forests (Ngoma, Otjituuo, N#ajagna, Sibulamunda, Izimwe, Muyako, OshikuTshiithilonde, Ehi-rovipuka and Omundaungilo covering a total area of 1,902,434)hectares were finalised and ready for submission to the Office of the Minister via the Office of the Permanent Secretary. Similar documents for Ehirjovipuka and Onjou community forests were submitted to the Otjozondjupa and Omusati Regional Governors for endorsement respectively.

The piloting of animal feed production at the African Wild Dog Community Forest with the support from NAFOLA and GIZ de-bushing projects, was completed.



Figure 5: The processed bush products into animal feeds at the African Wild Dog Community Forest.

Communities residing in community forests generated an income through issuing permits, selling of poles, droppers, thatch grass, seedlings, wood carvings, firewood and devils claw. In total N\$ 1,306,031.00 was generated in all participating community forests.

The achievements, challenges and opportunities of the community forests were highlighted and discussed at the annual general meetings.

PROJECT 3: TREE PLANTING AND ORCHARD DEVELOPMENT

The purpose of this project is to investigate the viability of planting trees and establishing orchards in the country so as to increase good nutrition through fruit production, poverty reduction and to create an opportunity for industrial development through agro-processing; for example fruit juice-making, fruit drying, canning and others.

The Directorate collected 901 kg of seeds of various tree species including fruit trees.



Figure 6: Mango trees at Etunda Orchard

A total of 203,266 seedlings were produced of which 67,711 were sold and 17,159 were donated to Government ministries, churches, schools, community projects, non-profitable organisations, and communal and resettlement farmers, while 8,261 seedlings were planted in existing and new orchards countrywide. 24.7 Tons of mangoes, papaya, guava and citrus fruits were harvested in departmental orchards.

Existing woodlots and orchards were maintained and various operations such as pruning, ploughing, spot weeding, watering and pest control, were carried out.

PROJECT 4: FOREST PROTECTION AND CONSERVATION

A total of 280 days were spent on fire awareness campaigns to educate communities on fire prevention, protection and control, to sensitise them on the management of forest/veld fires and to encourage them to participate in clearing of fire breaks.

Fire incidences destroyed a total area of 762,320 hectares. Fire suppression training and education remains a high priority in the regions. Combined efforts from DoF officials, Regional Councils, Namibian Police, Veterinary Services, Namibian Defense Force as well as community members make it possible to respond to fire outbreaks and the suppression thereof within sufficient time of its occurrence.



Figure 7: Fire break cleared in Kunene Region



Fire breaks have been constructed in most fire prone areas as a means of controlling the spreading of wild fires. The Ministry engaged local people to clear fire breaks in fire prone areas where about 3,568 km of firebreaks were cleared.

A total of 131 days were spent on the removal of problematic bees. 122 Swarm or bee colonies were re-located to various departmental and community apiaries. 63 DoF staff members and residents were trained on beekeeping in the northern regions. Twelve (12) apiaries were established in Siya, Rundu, Katima Mulilo and Ngoma plantation.

PROJECT 5: DE-BUSHING

A draft document on The National Strategy on De-bushing has been finalised and printed, ready for submission to Cabinet for approval. A booklet on the bush harvesting process was also developed and printed. Both documents were developed with financial assistance from GIZ.

A total area of 5,932 ha of bush encroached land on Ministerial farms was cleared with the assistance of 68 female and 531 men from the local communities.

PROJECT 6: FOREST AND BOTANICAL RESEARCH

Forest Research

The Subdivision Forest Research has managed to maintain and apply certain treatments to all of its field-based research trials. These trials are the Makambu and Kanovlei fire trials, *Terminalia* coppicing trial, *Ziziphus Mauritiana* (Chinese apple / Indian plum) species trial, Marula germplasm multiplication trial, and Phenological studies of *Annona senegalensis* (African Custard Apple).

The main aim of the Makambu and Kanovlei fire trials is to test the effect of different fire regimes (fire applied at different times of the year) on tree, shrub and grass growth patterns. For the *Terminalia* coppicing trial, the main aim of this trial is to test the coppicing ability of *Terminalia Sericea* by applying different pruning methods. For the *Ziziphus Mauritiana* species trial, the main aim is to test the ability of this species (original from Malawi) to grow under our climatic conditions. The trial was planted at Etunda in Omusati region. With regard to the Marula germplasm multiplication trial, the main aim of this trial is to determine the ability of marula to be propagated through grafting.

In addition to the above activities, a *Berchemia discolor* (embe) provenance trial was established at liheke Forestry Research station.

Botanical Research:

The Sub-Division National Botanical Research Institute achievements are as follows:

- (a) Facilitated the signing of twelve (12) Material Transfer Agreements.
- (b) Thirty four (34) research and collecting permit applications were reviewed during the reporting period as part of the MET Permit Review process.
- (c) Three (3) new interns were appointed under the SASSCAL project.
- (d) Mounting of specimen numbers and loading of specimens have been doubled due to assistance from the interns.
- (e) The manual of the Mike Cotton (MCS) AWS has been completed.
- (f) Ms Rennie Hilukwa was appointed as the National Focal Point for the ITPGRFA.
- (g) Training in QGIS was undertaken by WIND staff.
- (h) Three (3) NUST interns completing their Work Integrated Learning at the NBRI has helped immensely with the inventory of slide collections, mycology collection and re-curation of Lichen



and Bryophytes collections. The interns also assisted with activities in the library, botanical garden and herbarium.

- (i) The Koichab Pan Automatic Weather Station has been installed.
- (j) A plant (*Paralepistemon Shirensis*, SC 245) flowering in the live plant collection turned out to be a new record for Namibia.
- (k) Two (2) new display areas were created in the Botanical Gardens and 39 plants were replanted.
- (l) A new display was created at the entrance of the NBRI by the bioinformatics team on *Lithops pseudotruncatella*. In future, new displays will be erected on a quarterly basis.
- (m) The manuscript “Towards better risk assessment for conservation of flowering stones: plant density, spatial pattern and habitat preference of *Lithops Pseudotruncatella* in Namibia” was published online in the South African Journal of Botany and the printed version will be published in the March 2017 issue of the Journal.
- (n) An article “A synopsis of *Rhinacanthus* (Acanthaceae) in Angola and Namibia” has been submitted to Kew Bulletin for publication. Two NBRI staff members, Mr Leevi Nanyeni and Ms Frances M. Chase are co-authors of this publication.
- (o) A poster “Assessing the species boundary of *Tribulus*” was presented at the South African Association of Botanists (SAAB) Conference in January 2017 as part of the qualifying studies of Mr Nanyeni.
- (p) The NPGRC received a microscope donated under the ITPGRFA Benefit Sharing project.

Forest Monitoring and Mapping

In the case of the **Subdivision Forest Monitoring and Mapping**, all monthly burnt area reports as well as the daily fire bulletins were produced as scheduled and distributed. These maps give a clear indication where veld fires occurred in the country.

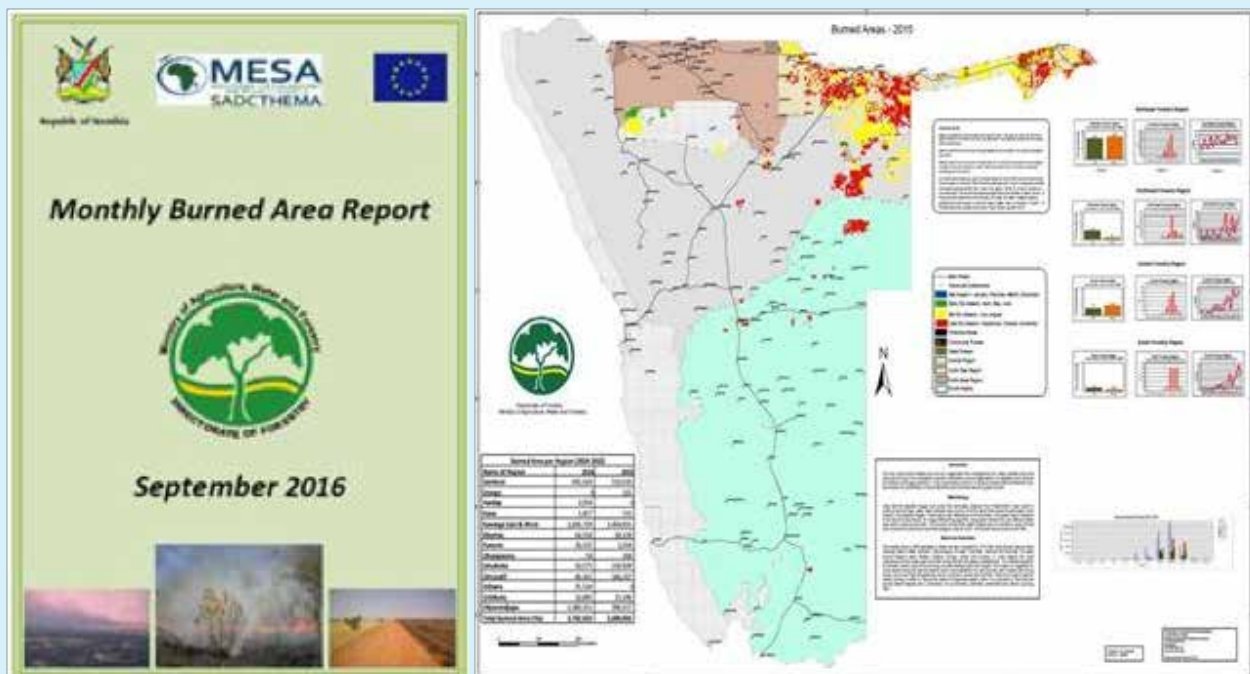


Figure 7: The 2016 poster shows areas burned in Namibia. A total of 76,2320 hectares were burned

All other maps such as the Regional fire cutline maps for Zambezi, Kavango East and West, Community Forest boundary maps for Izimwe, Muyako, Ngoma and Sibula Munda, Fire cutline priority area maps for Oshana, Kunene, Omusati, Kavango West and East maps were produced.



A manual for the use of Remote Sensing and GIS data for Pre-harvesting Inspection of Forest resources was developed.

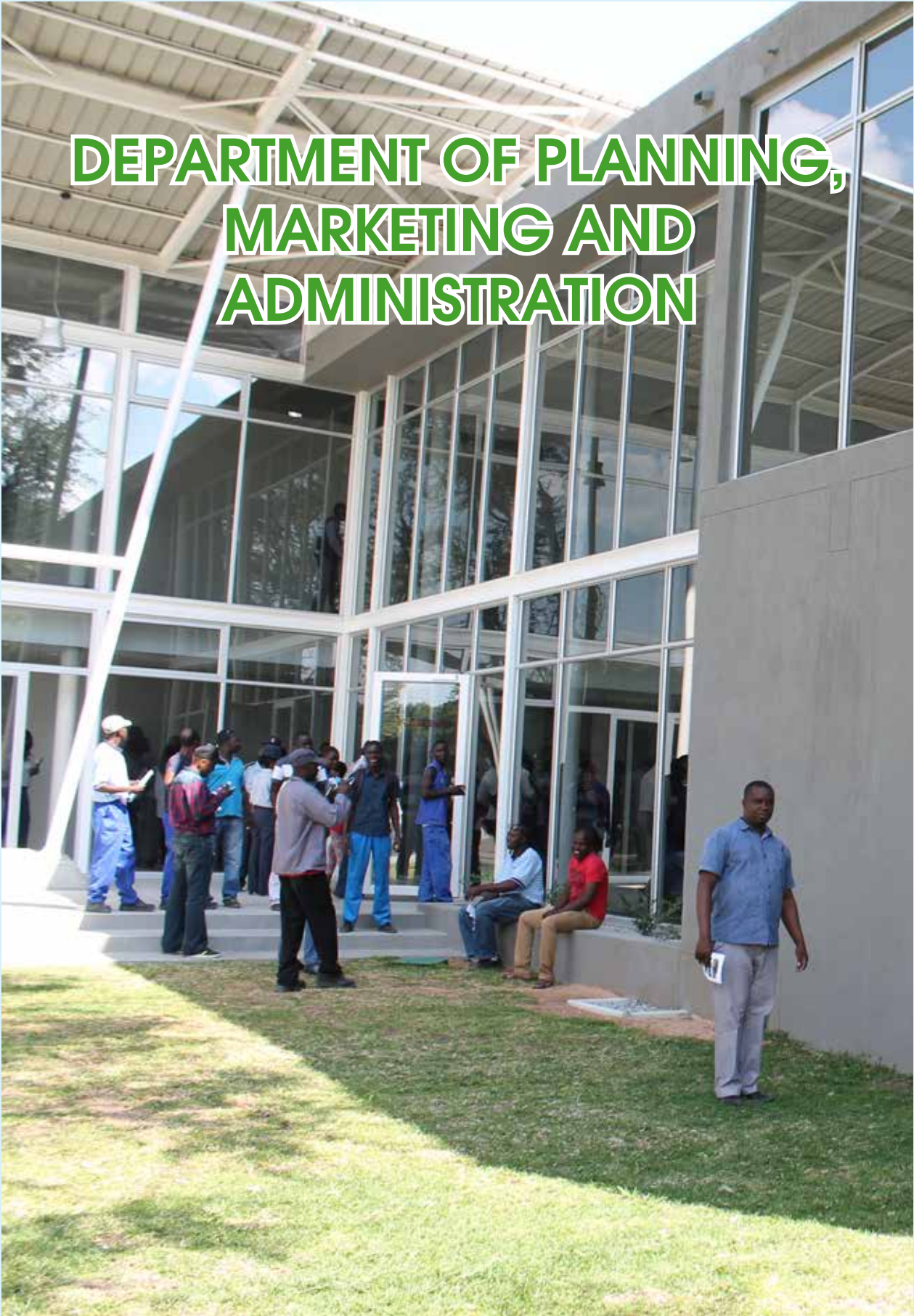
In terms of Digital Data acquisition, satellite images from various sensors were downloaded, processed and archived.

National Forest Inventory

The **Section National Forest Inventory** has carried out forest inventories in the Caprivi State Forest and also conducted Forest Inventory training at Rundu and Ongwediva District offices involving 19 trainees. The section also successfully carried out a forest assessment of carbon emissions on Mopane Forests/ Woodlands in North Western Namibia.

CHALLENGES

- Incidents of illegal harvesting and transporting of forest products remain a challenge in the country despite the intensification of patrols and awareness campaigns.. Several meetings were held to discuss procedures on how to obtain permits..
- Many seedlings in the nursery died as a result of the water facilities being disconnected due to non-payment of the water bill by General Services. Trees in orchards were attacked by pests, and diseases and Nematodes resulted in fruit trees dying.
- Trees such as *Eucalyptus* and *Casuarinas equistefolia* in the orchards established in the grasslands died, possibly due to frost and salty underground water. Many fruits trees (*Psidium Guajava* and *Mangifera Indica*) in the orchards died due to frost. This hampered the progress of tree growth and survival in orchards.
- People stealing fruits in the orchards.
- Delays by the Ministry of Works and Transport in issuing of bill of quantities is a concern and hampers construction and renovations.
- The regions without trucks need trucks to collect nursery soil and manure as well as load poles, droppers, firewood and charcoal confiscated during law enforcement operations as well as carrying water tanks to water departmental and community orchards.
- Delay in payment of casual workers. Monitoring of casual labourers is cumbersome since there are shortages of staff members in regions. They need strict monitoring and on-site supervision.
- There is lack of water facilities in the Southern region, and ground water levels are deep, resulting in slow process of tree planting. The water is perceived to be mainly for human and animal consumption, and therefore the drilling of boreholes for tree planting is perceived to be improper by the communities.
- Generally, the Southern region has a low number of technical staff, which has resulted in poor implementation of activities planned in accordance with regional implementation strategy and district work plans, and ultimately towards realisation of implementing the DoF annual work plans.
- Ill-health conditions of the workers causes delays and affects productivity. Most offices suffered the consequence of staff being transferred back to regions of origin especially those on additional to the structure.
- The delay of approval required for the service and repair of vehicles in region hampers progress of various projects in the region. Furthermore, the lack of skilled motor mechanics at the garages on tender to repair government vehicles compounded by the fact that the motor vehicles are old, further hampers implementation of forestry projects as the motor vehicles are not in a condition to be used in the field.
- Lack of staffs' ministerial ID cards to identified them when carrying law enforcement operations.



DEPARTMENT OF PLANNING, MARKETING AND ADMINISTRATION





Directorate of Planning and Business Development



OBJECTIVES

- To contribute to the creation of a conducive policy environment for the agricultural, water, forestry and co-operative sub-sectors through regular policy review and development.
- To acquire market access for agricultural products through negotiating favourable trade agreements and provide market information and agricultural statistics and data to the agriculture industry.
- To improve local communities livelihoods by empowering them through the development of co-operatives and facilitate rural development through introduction of income-generating activities, agro business development and value addition.
- To conduct project appraisals, monitoring and evaluation of the Ministry's programmes as well as impact assessments.
- To collect and disseminate agricultural statistics.

MAJOR ACHIEVEMENTS

Policy Framework

The Directorate of Planning and Business Development (DPBD) continued to carry out policy review, coordinate the strategic planning processes, monitor and evaluate development programmes for the Ministry of Agriculture, Water and Forestry as well as coordinate sectoral planning. The Directorate coordinated the review of the 2012/13-2016/17 MAWF strategic plan and submitted it to the Office of the Prime Minister. The Directorate has reviewed the Namibia Cooperative Policy, which was approved by Cabinet.



Ministerial Planning

The Directorate compiled and submitted the 2016/17 Annual Budget Execution Plan report to the National Planning Commission (NPC). The report contains information on the progress made with regard to the implementation of the Ministry's capital projects and also highlights the projects expenditure during the period under review.

The Directorate also monitored and evaluated the Rain-fed Crop Production Program in all crop growing regions and another 13 Ministerial Capital Projects. The purpose of monitoring and evaluating the Ministerial projects is to verify progress against information provided for in the Budget Execution Plan report and NDP4 bi-annual report amongst other important plans.

The Directorate also coordinated and compiled the Technical Paper and the Budget Motivation for the 2016/17 financial year which was presented and discussed in Parliament. This statement defined some of the milestone achievements for the 2015/16 financial year as well as the Ministerial planned activities for the 2016/17 financial year.

The DPBD coordinated the Ministerial Development Budget process and submitted the Projects Identification Forms information for the 2017/18-2019/20 financial years to the NPC. The Development Budget contains information on planned activities for the Medium Term Expenditure Framework (MTEF) as well as the budgeted amounts and reporting on the past achievements. The Directorate compiled and submitted the State of the Nation Address to the State House.

Sectoral Planning

The Directorate participated in the formulation of the Fifth National Development Plan (NDP5). The NDP5 calls for the execution of all projects and programmes that have high potential to contribute to the sector's desired outcomes and subsequently to the overall NDP5 Goals and Sustainable Development Goals (SDGs).

In an effort to facilitate the planning and reporting of the Agriculture and Forestry as well as Water and Sanitation sectors, the Directorate compiled the coordinated a two-day stakeholder's consultation workshop in Windhoek. The purpose was to formulate the Agriculture and Forestry, Water and Sanitation, and Annual Sectoral Execution Plans (ASEP) for 2016/17. Furthermore, the Directorate compiled the 9th NDP4 progress report for the abovementioned sectors.

The Directorate coordinated the compilation of the 10th and Terminal NDP4 progress report for the 2012/13-2016/17 financial years for the Agriculture and Forestry as well as Water and Sanitation sectors. The ASEPs plans and reports are submitted to NPC as per NDP5 reporting guidelines, and subsequently forwarded to Cabinet for discussion.

Statistics and food security

The Directorate, together with its cooperating partners in the crops and food security monitoring assessments, continued with its objective of providing information and advice to decision makers on issues related to early warning and food security. This was achieved through assessing the crop and food security situation as well as the availability of agricultural inputs at regional and household levels. Three agro-assessments in seven major communal crop growing regions were successfully conducted during the period under review and reports thereof along with recommendations were produced and disseminated to decision makers and stakeholders for possible interventions.

The Division responsible for National Early Warning and Food Information in the Ministry carried out the Agricultural Inputs and Household Food Security Monitoring Assessment in the seven northern communal major crop producing regions¹ as from 31st October to 25th November 2016.

¹



The main crop and household food security assessment was done in May/June 2016. The main purpose of this assessment was to assess and quantify the 2016 crop harvest in the major crop-growing regions of Namibia and provide an early warning report on the geographic locations of agronomic anomalies, the effects of floods, droughts, and other significant events.

The report noted that the country suffered another drought episode associated with the 2015/2016 El Niño event as most parts of the country reported poor and below normal rainfall performance. Since the start of the 2015/2016 rainfall season, the country received poor and below normal rainfall. According to farmers, significant delays in the onset of the rainfall season, erratic and insufficient rainfall patterns as well as prolonged dry spells was observed in the season before the rainfall ended abruptly.

The report further indicated that the crop estimates showed a slight improvement but was still below the average production. The aggregate coarse grain indicated that the country noted a slight improvement in harvest of 18% higher than the previous season, but 31% below the average production. The slight improvement was as a result of a small increase in the harvest from most of the major crop producing regions, except for the Zambezi and Oshana regions which were mainly affected by the 2015/16 drought. The Agricultural Inputs and Household Food Security Monitoring Assessment was carried out in November 2016. The main purpose of this assessment was to assess the overall agricultural inputs situation at household and regional levels and to determine to what extent farmers had prepared their land prior to the 2016/17 crop season.

In addition, the changes in the household food security, as well as livestock and grazing conditions were also assessed. As part of the food security monitoring, the assessment also examined household food availability and access. The result of this assessment indicated that, availability of basic agricultural inputs and services was satisfactory and sufficient to start the season with.

The report further reported shortages of sorghum and non-cereal seeds due to a lack of suppliers. With regard to household food security, the report noted that the situation continued to deteriorate as many households able to harvest were reported to have depleted their last season's harvest. Furthermore, according to most households, their last season's poor harvest which is being supplemented with retail market purchases, only lasted for a few months. Most households were dependent on the market and the Government Drought Relief Food Programme for food access.

The Crop Prospects and Household Food Security Assessment were conducted in February/March 2017. This assessment was aimed at providing an overview and provisional estimates of crop production and planted area. Preliminary crop estimates indicated a considerable improvement in the expected harvest, which is significantly better than last season's harvest in all the regions and above average production in most areas.

Although household food security is reported to have deteriorated due to drought experienced during the last season (2015/16), the situation was expected to improve as from mid-March 2017, given good prospects in the expected agricultural production. The report further revealed that the food security situation for most households which were mainly dependent on the market and or the Government Drought Relief Food Programme for food access, was expected to improve as from mid-March, when seasonal fresh produce would be available and ready for consumption until the main harvest in May 2017.

Publications

The Directorate continued providing data and information on the performance of the agriculture sector, by highlighting the production, prices and marketing trends. Secondary data and information was collected from various stakeholders, analysed and used in the compilation of Agricultural Statistics Bulletin and Agricultural Price Watch.



The Agricultural Statistics Bulletin consists of time series data from 2010 to 2015, while the Agricultural Price Watch consists of time series data from 2013 to 2015. The two publications were produced within the 2016/2017 financial year.

AMIS

The Directorate contracted a consultant to review the Agriculture Management Information System (AMIS) and develop a user manual. The consultant conducted training on AMIS for staff members from the Information Technology System (IT) Division and DPDB. The Directorate arranged and trained MAWF officials from various divisions on how to use and upload data and information on the system.

Domestic Agro Industry and Agribusiness Development

Budgetary and technical advice was provided to the Meat Board of Namibia, Namibian Agronomic Board, Karakul Board of Namibia, the Agro Marketing and Trade Agency, and the Agricultural Business Development Agency.

Continued implementation of the Southern African Customs Union (SACU) rebate quota facility through issuance of rebate permits for the duty-free importation of wheat, cheese, butter, skimmed and whole milk powder.

The Directorate facilitated the allocation of the rebate quotas under the SADC - EU Economic Partnership Agreement on pork, pig fat, butter, cheese, wheat, barley, cereal based food preparations, ice cream and mortadella bologna.

Discussions on the transfer of functions regarding the domestic market development for livestock from the Meat Board of Namibia to the Agro Marketing and Trade Agency, were also facilitated by the Directorate. The transfer of the domestic marketing function will improve and secure market access for local producers, processors and traders in livestock and livestock products.

The Directorate facilitated the appointment of operators for the Oshakati and Katima Mulilo abattoirs after Meatco withdrew from operating at the two abattoirs on 4 March 2016.

A contract with a consultant was entered into in order to investigate the viability of a Hydroponic Project in //Kharas region.

The Directorate continues to support the implementation of the Market Share Promotion (MSP) initiative for horticulture produce. The MSP aims at increasing the domestic market share for locally produced horticultural products. However, the MSP could only be maintained at 44% during 2016 due to climate conditions and the outbreak of plant and pest diseases which adversely affected production.

Agriculture Trade Negotiations

The Directorate provided the agriculture positions for the Southern African Development Community (SADC) Meetings, Southern African Customs Union (SACU) Meetings, SADC-Eastern African Community (EAC)-Common Market for Eastern and Southern Africa (COMESA) Tripartite Trade Negotiations as well as the SACU-European Free Trade Area (EFTA) meetings. The Tripartite Trade Negotiations between the 26 Member States of the three Regional Economic Communities of SADC, EAC and COMESA are on-going. The Directorate participated in the discussions for the implementation of The Economic Partnership Agreement between the European Union and the SADC-EPA States. It also participated in the review of the SACU - European Free Trade Area Agreement which was implemented in 2010.



International Co-operation

Implementation of the first phase of the South-South Cooperation project with the Food and Agriculture Organisation and the People's Republic of China was facilitated by the Directorate.

The Directorate furthermore facilitated the conclusion and signing of the Memorandum of Understanding between Namibia and Botswana on cooperation in forestry and fire management.

Co-operative development

The DPBD through the Division of Co-operative Development and Regulation (DCDR) continued to administer the Co-operatives Act 1996, (Act 23 of 1996) and created an enabling environment for Co-operatives development in Namibia. The division is responsible for facilitating the development of Co-operatives and Co-operative activities in all the economic sectors of the country.

During the period under review, Co-operative businesses were involved in economic activities such as livestock marketing, crop production, sewing and tailoring, savings and credit, small mining, marketing of semi-precious stones, arts and crafts, karakul carpet weaving, mahangu marketing, seed multiplication and certification, provision of agricultural inputs such as seeds, fertilisers and ploughing services, and first level oil processing from indigenous plants such as Marula, Kalahari Melon and Ximenia.

The vital role played by Co-operatives in improving the livelihoods of Namibian citizens, especially in the rural areas, cannot be over-emphasised. Co-operative businesses, wherever they may exist, have managed to bring marketing and supply services closer to their members as well as non-members in various communities. They also serve as catalysts for the provision of access to savings and credit facilities to their members, farming input and implements in many rural communities, and the provision of employment and income generating opportunities to many households.

During the period under review, ten (10) new co-operatives were provisionally registered. These are:

- Madawa Co-operative Ltd.
- Okhaisen dara Co-operative Ltd.
- Zebra Co-operative Ltd.
- Auob Farmers 'Co-operative Ltd.
- !USA Co-operative Ltd.
- Otjokavare Farmers' Co-operative Ltd.
- /Khomas Omkhâigu Co-operative Ltd.
- Khâi Da-Gô Co-operative Ltd.
- ClevAgri Farmers' Co-operative Ltd.
- Xukuruamase Co-operative Ltd.

Furthermore, the business plans of the following five (5) Co-operatives were received for review by the DCDR. The finalisation of these plans would enable the Co-operatives to apply for full registration:

- Otji-Young Farmers Multi-purpose Co-operative Ltd.
- Aminuis Farmers' Association Co-operative Ltd.
- Ozongondjero Omahi Mahi Genetic Improvement Co-operative Ltd.
- NANTU- Likwafela Co-operative Ltd.
- Credo Co-operative Ltd.



The DCDR offers a range of courses through the Co-operative College, which was established to provide education and training to co-operative members, employees and stakeholders in co-operative development. During the period under review, the Co-operative College conducted Co-operative Member Education for co-operatives in the Kunene, Erongo Regions. A total of twenty (20) members were trained.

The DCDR continued to provide accounting and audit services to registered co-operatives as “Auditor of last resort” during the year under review. The services are provided to co-operatives that are not in a position to afford the highly priced accounting and audit services of professional audit firms. During the period under review, completion of books and audit sessions were conducted in the Hardap, /Karas, Khomas, Omaheke and North Central regions, and a total number of thirty (30) Co-operatives were assisted.

The DCDR facilitates two loan guarantee funds. These are administered by the Agribank of Namibia and Bank Windhoek for agricultural and non-agricultural co-operatives respectively. The purpose of the loan guarantee fund is to enable viable co-operative businesses in need of funding, but without collateral, to access credit from these two (2) financial institutions.

During the period under review, two (2) co-operatives were able to access credit through the loan guarantee fund for agricultural co-operatives. The loan guarantee fund for agricultural co-operatives is also used to guarantee production loans advanced by the Agribank of Namibia to small scale farmers at the Green Schemes.



Directorate of General Services



1.1 OBJECTIVE

The main objective of the Directorate of General Services is to provide corporate support services to the other Directorates of the Ministry of Agriculture, Water and Forestry.

The purpose and specific objectives of the Directorate are to:

- Ensure effective Ministerial Financial Management.
- Ensure efficient Internal Audit Services.
- Ensure efficient provision of Ministerial Support Services.
- Administer Human Resources efficiently and effectively.
- Ensure efficient Ministerial Information Communication Technology Services.
- Efficiently mainstream of Gender, Employee Wellness and HIV & AIDS.
- Improved Fleet Management through coordination of Comprehensive Fleet Management System.
- Effective coordination of Ministerial Public Information Dissemination.
- Ensure efficient and effective administration of Ministerial Procurement Management



1.2 RECURRENT ACTIVITIES

1.2.1 MAJOR ACHIEVEMENTS FOR 2016/2017

1.2.1.1 FINANCE

- EFT (Electronic Funds Transfer) of daily subsistence and travelling allowance (DSA), accounts payable and payroll payments facilitated.
- Medium-term Budget Review submitted on time to MoF.
- Ministerial Accountability Report, Medium-term Plan, detailed MoF forms and audit reports submitted.
- Ministerial budget cycle efficiently facilitated.
- Ministerial budget execution rate reached the set target of 98% for both operational and development as set in the Annual Plan of the 2016/17 financial year.

1.2.1.2 INTERNAL AUDIT

- Eighty-two (82) financial inspections in eleven regions were conducted.
- Transport system audits in Kavango and Hardap regions for Directorates DWSSC, DAPEES and DoF were conducted.
- Administration audits on transport, receipt and issue of fuel in the Directorates that operate trucks were conducted.
- Revenue inspections for fifteen (15) offices in Kunene Region were conducted.
- Risk-based Internal Audit program and completion of risk register for all Directorates implemented.
- Investigation of three (3) financial irregularity cases was completed

1.2.1.3 PUBLIC RELATIONS (PR)

- Annual Reports and Customer Service Charter were published.
- Response to media on Ministerial related issues as well as press releases were facilitated.

1.2.1.4 HUMAN RESOURCE (HR)

- Conditions of service which include remuneration system, leave, retirement and GIPF claims of deceased staff members was effectively administered.
- Seventy six (76%) of budgeted vacant posts were filled.
- Facilitated the implementation of Performance Management System for staff members at all levels.
- Placement of staff on new restructuring program was completed.
- The three (3) year Ministerial Affirmative Action plan in compliance with the Affirmative Action Act was completed and submitted to the Employment Equity Commission (EEC) report. Affirmative Action Sensitisation staff meetings were conducted in Kavango East and West regions.

1.2.1.5 AUXILIARY SERVICES

- Utility services were rendered to Ministerial outlets in all 14 regions.
- Security services were provided at MAWF outlets countrywide.
- The approval process for tenders was facilitated through the Tender Board to procure goods and services for the Ministry.



- A Ministerial auction team was trained on auditing.
- Livestock stock takings were conducted at all 13 research stations that keep livestock as well as at all of the ministerial outlets in the 14 regions.

1.2.1.6 INFORMATION COMMUNICATION TECHNOLOGY (ICT)

- Regional offices were provided with computer network infrastructure to provide them with access to the Ministerial internet and intranet systems.
- Computer software licenses were renewed.
- The Ministerial ICT system continues to be maintained and updated.
- The Agricultural Management Information System (AMIS) was reviewed and updated.
- MAWF offices were connected to ICT infrastructure (upgraded to 1024 kilobytes per second MPLS)
- Support services on ICT to staff members was provided.
- The Ministerial website was populated and maintained.

1.2.1.7 EMPLOYEE WELLNESS & HIV/AIDS PROGRAMME

- Information, Education & Communication (IEC) materials and condoms were distributed to regional offices quarterly.
- Quarterly awareness creation sessions on HIV/AIDS and wellness issues (Cancer, Blood pressure, Cholesterol and Diabetics as well as Facilitation of complete health diagnostics with computers at work) were conducted.
- The World Aids Day was commemorated on 01 December 2016.

1.2.1.8 PLANT AND FLEET MANAGEMENT

- Transport services and fleet management to the Ministry was provided.
- Provision of fuel, licensing and repairs and maintenance to ministerial fleet of 1600 vehicles and trucks was facilitated.

2.2.2 CHALLENGES EXPERIENCED IN 2016/2017

2.2.2.1 FINANCE

- Delays experienced in the acquisition of supplier codes for EFT payments to suppliers for goods and services delivered.
- Budgetary constraints to pay service providers for services rendered during the 2016/17 financial year.
- Non-payment of utility services resulted in discontinuation of water and electricity at offices in the regions for more than five (5) months.
- Non-payment of outstanding invoices resulting in claims against State and extension of time on projects, which in turn has had financial implications on the affected projects, especially the Neckartal Dam Project.

2.2.2.2 INTERNAL AUDIT

- Delays in completion of legal cases.
- Inactive Ministerial Audit Committee.



2.2.2.3 PUBLIC RELATIONS (PR)

- Delays in providing required information from Directorates on time.

2.2.2.4 HUMAN RESOURCE (HR)

- Difficulty to recruit staff members/persons to fill posts in the scarce job categories and OPM delays.
- Challenges experienced on the implementation of Performance Agreements at all levels.
- Budget cuts that resulted in a moratorium placed on filling vacancies.

2.2.2.5 AUXILIARY SERVICES

- The tariff adjustment of the Local Authorities does not coincide with the budget period and the increases are higher than the budgeted increase.
- Unexpected statutory tariff adjustment of the security services.

2.2.2.6 INFORMATION COMMUNICATION TECHNOLOGY (ICT)

- Delays from service providers to install the trunking (networking infrastructure) timeously.

2.2.2.7 PLANT AND FLEET MANAGEMENT

- Inability to update the fleet management system due to lack of funds.
- Long repair down-time due to payment delays.
- Lack of discipline of drivers using Government vehicles.

2.3 CAPITAL PROJECTS ACHIEVEMENTS AND CHALLENGES

2.3.1 RENOVATION OF MAWF BUILDINGS

2.3.1.1 (a) ACHIEVEMENTS FOR 2016/2017

- Two Ministerial staff houses were renovated. Renovation of Offices and main store at Okahandja, Otjozondjupa region.

2.3.1.1 (b) CHALLENGES FOR 2016/2017

- Budgetary constraints.

2.3.2 CONSTRUCTION OF REGIONAL HEAD QUARTERS

2.3.2.1 (a) ACHIEVEMENTS FOR 2016/2017

- Regional headquarters in Rundu, Kavango region and Katima Mulilo, Zambezi region have been completed and inaugurated.
- Construction of Regional headquarters at Eenhana, Ohangwena Region, is 75% complete.

2.3.2.1 (b) CHALLENGES FOR 2016/2017

- Budgetary constraints.



2.3.3 CONSTRUCTION OF ADDITIONAL NEW OFFICE COMPLEX AND WAREHOUSES

2.3.3.1 (a) ACHIEVEMENTS FOR 2016/2017

- The Government Office Park (East Wing) in Windhoek, Khomas region is 50% complete.

2.3.3.1 (b) CHALLENGES FOR 2016/2017

- Budgetary constraints to pay service providers for services rendered during the 2016/17 financial year.

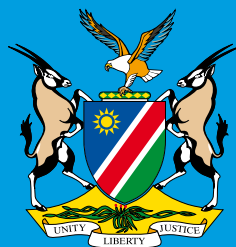
2.3.4 EXPANSION OF INTRANET AND IMPLEMENTATION OF E-GOVERNANCE FOR MAWF

2.3.4.1 (a) ACHIEVEMENTS FOR 2016/2017

- During the year under review, Okaukamasheshe AC, Gobabis Forestry Office, Okahandja DAPEES, Rundu Regional Office, Engombe ADC, Onamishu ADC Gibeon Rural Water and Manheim Research were connected onto the MAWF network.
- Structural cabling and trunking of Okahsana Research Station, Katima Forestry, Omafo (DAPEES and DWSSC) new additional offices and Onayena ADC were also completed.

2.3.4.1 (b) CHALLENGES FOR 2016/2017

- Budgetary constraints.
- In conclusion, during the year under review the overall performance of the Directorate of General Services, despite budgetary constraints, has been excellent.



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