Republic of Namibia

Ministry of Agriculture Water and Forestry

Annual Report 2015/ 2016

Vision

"To be recognized as the leading contributor to food security, agro-product competitiveness, increased and equitable access to our natural resources for improved livelihoods, wellbeing and wealth for all."

Mission

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

Mandate

"To promote, develop, manage and utilize agriculture, water and forestry resources sustainably."

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ABBREVIATIONS/ACRONYMS

ADCs	Agricultural Development Centres
AMESD	African Monitoring of the Environment for Sustainable Development
AMESD	African Monitoring of the Environment for Sustainable Development
AMIS	Agricultural Management Information System
AMIS	Agricultural Management Information System
BMCs	Basin Management Committees
BMCs	Basin Management Committees
BRAHMS	Botanical Research and Herbarium Management System
BRAHMS	Botanical Research and Herbarium Management System
BSE	Bovine Spongiform Encephalopathy
BSE	Bovine Spongiform Encephalopathy
CBMMP	Co-operative Business Management Mentorship Programme
CBMMP	Co-operative Business Management Mentorship Programme
CBOs	Community Based Organizations
CBOs	Community Based Organizations
CBPP	Contagious Bovine Pleuropneumonia
CBPP	Contagious Bovine Pleuropneumonia
CEB	Cuvelai- Etosha Basin
CEB	Cuvelai- Etosha Basin
CVL	Central Veterinary Laboratory
CVL	Central Veterinary Laboratory
DAPEES	Directorate of Agricultural Production Extensions and Engineering Services
DAPEES	Directorate of Agricultural Production Extensions and Engineering Services
DAT	Division of Agricultural Training
DAT	Division of Agricultural Training
DCD	Division of Co-operative Development
DCD	Division of Co-operative Development
DCPP	Dry Land Crop Production Programme
DCPP	Dry Land Crop Production Programme
DPBD	Directorate of Planning and Business Development

DPBD	Directorate of Planning and Business Development
DSA	Daily Subsistence Allowance
DSA	Daily Subsistence Allowance
DVS	Directorate of Veterinary Services
DVS	Directorate of Veterinary Services
DWSSC	Directorate of Water Supply and Sanitation Coordination
DWSSC	Directorate of Water Supply and Sanitation Coordination
EIA	Environmental Impact Assessment
EIA	Environmental Impact Assessment
ELISA	Enzyme Linked Immunosorbent Assay
ELISA	Enzyme Linked Immunosorbent Assay
EU	European Union
EU	European Union
FMD	Foot and Mouth Disease
FMD	Foot and Mouth Disease
FVO	Food and Veterinary Office
FVO	Food and Veterinary Office
IAEA	International Atomic Energy Agency
IAEA	International Atomic Energy Agency
ICEIDA	Iceland International Development Agency
ICEIDA	Iceland International Development Agency
IFMS	Integrated Information Management System
IFMS	Integrated Information Management System
IPP	Indigenous Plants Products
IPP	Indigenous Plants Products
IWRM	Integrated Water Resources Management
IWRM	Integrated Water Resources Management
LDC	Livestock Development Center
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 Tonnes
MTEF	Medium Term Expenditure Framework
NAB	Namibian Agronomic Board
NAMIRES	National Integrated Monitoring Report and Evaluating System
NamLITS	Namibia Livestock Identification and Traceability System
NamWater	Namibia Water Corporation
NAWASA	Namibia Water Supply and Sanitation Sector Programme
NBG	National Botanic Garden
NBRI	National Botanical Research Institute
NCAs	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
NPGRC	National Plant Genetic Resources Centre
NRA	Natural Resources Accounts
NRMPS	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
PRO	Public Relations Officer
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
SAREP	Southern Africa Regional Environment Programme
SASSCAL	Southern African Science Service Centre for Climate Change and Adaptive Land Management
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

WATER AND FORESTRY

Policy and Legal Framework
To create an enabling environment to develop, manage and sustainably utilize 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, create awareness and ensure conformity to regulations and policies on plant-animal health and agro-chemical quality and safety.

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 potential and economically viable projects and products; and to also undertake market research for drafting policy papers on agriculture, water and forestry for 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 access to portable water by rural communities for human consumption, livestock 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 utilization thereof.

Bulk Water Infrastructure Development
To ensure the sustainable development of bulk water supply infrastructure for urban domestic use, as well as for industrial, mining and irrigation development.

Forestry Management
To develop, manage and facilitate the economic and sustainable utilization of forest resources.

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

Corporate Governance
To establish and maintain an effective and efficient administrative system to manage human and financial resources, assets and information technology in support of the mandate of MAWF.

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

Institutional Development
To develop an appropriate institutional framework to undertake specialized 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 Organizations
To create a conducive and enabling environment for the growth of businesses, for information exchange on issues of mutual interest, for consultation on major policy decisions and new developmental initiatives, and for implementation of programs 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 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 phyto-sanitary 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 as well as coordinate sectoral planning. To that effect, the Ministry has finalised the review of the 1995 National Agricultural Policy. The revised Namibia Agriculture Policy was approved by Cabinet and launched in December 2015.

During the period under review, the Ministry has compiled and submitted the 2015/16 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, as well as highlighting the projects' expenditure during the period under review.

In addition to this reporting, the Ministry monitored and evaluated the Rain-Fed Crop Production Program in all crop growing regions and nine other Ministerial Capital Projects. The purpose of internal Ministerial M&E is to verify progress against information provided for, in the Budget Execution Plan report and the NDP4 Bi-annual report.

In order to increase food production in the country, the Dry Land Crop Production Programme was implemented in the following Regions: Kavango East, Kavango West, Zambezi, Oshikoto, Oshana, Ohangwena, Omusati, Kunene North and partly in Otjozondjupa and Omahake Regions. Through this programme, farmers were assisted with subsidized farm inputs (fertilizers and improved seeds) and agricultural services (ploughing and weeding services).
The Ministry continued to ensure the development, expansion and management of its Green Scheme Irrigation Projects countrywide. Therefore, the Ministry assisted the AGRIBUSDEV with the management and operation of the Green Scheme Irrigation Projects, namely: Sikondo, Shadikongoro, Uvhungu-vhungu, Ndonga-Linena, Musese, Etunda, Hardap, Tandjieskoppe, Kalimbeza, and the Orange River Irrigation Projects (ORIP).

The Ministry supervised the construction of boundary fences, water supply, milking parlour and cow housing, renovations to existing buildings, new buildings, green houses, bulk and low voltage electrical supply at the Uvhungu-vhungu Irrigation and Dairy Project.
Furthermore, the Ministry has supervised the installation of an oil processing plant, wheat milling plant and 4000 MT silos at Shadikongoro Irrigation Project, the construction of net houses at Sikondo Irrigation Project, the construction of small scale farmers' houses at Musese Irrigation Scheme, the construction of roads and pump station at Musese Irrigation Scheme, the construction of Bulk Water Pipeline and Irrigation systems at Musese Irrigation Scheme, as well as the construction of Phase 1 of the Fresh Produce Marketing Hubs in Wanaheda, Windhoek.
In addition, the construction of the Agricultural Technology Centres at Ongwediva, the construction of de-bushing, irrigation, pump station, medium and low voltage electrical supply at Mashare Irrigation Project Phase Two, as well as the construction of Ndonga Linena Irrigation Phase Two Projects are underway.

In the area of Veterinary Services, the existing markets for livestock and livestock products were maintained, except for the loss of the South African market, for beef, from the FMD Protection Zone, following the outbreak of Foot and Mouth Disease in that area, between May and July 2015. However, new markets were explored. The severe drought conditions experienced across the country during 2016 caused many livestock losses.

The 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, 2017/2018.
Moreover, in the area of Water Supply, the maintenance of more than 3 500 existing communal water points were carried out countrywide. During the period under review, a total number of three thousand nine hundred and three (3993) private water 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 connected to existing pipeline schemes. This brings the total private off-takes to twenty one thousand nine hundred and sixty seven (21 967), to date.

In the area of Forestry, the National Strategy for De-bushing was drafted, presented and further developed to include comments from various stakeholders, from which the final Strategy was produced. The dossier document of Forest Act regulations finalized for the Government Gazette and was gazetted in the Government Gazette on 5 August 2015.
Moreover a total of 16,603 permits were issued for utilizing forest products, while 87 fines were issued to people illegally in possession of forest products. A total of 454 roadblocks and 600 patrols were conducted.

In conclusion, I would like to thank all MAWF staff and all stakeholders, in the Sector, for their continued commitment, hard work and undeterred support, towards the achievement of our organizational objectives. Going forward, I would also like to urge all to redouble their efforts in ensuring that Government projects policies and programs are timeously and practically implemented, for the benefit of all Citizens, Residents and Visitors of and to the Republic of Namibia.

Furthermore, I would like to thank the development partners, 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 all, must remain determined and focused!
Victory is and remains certain.

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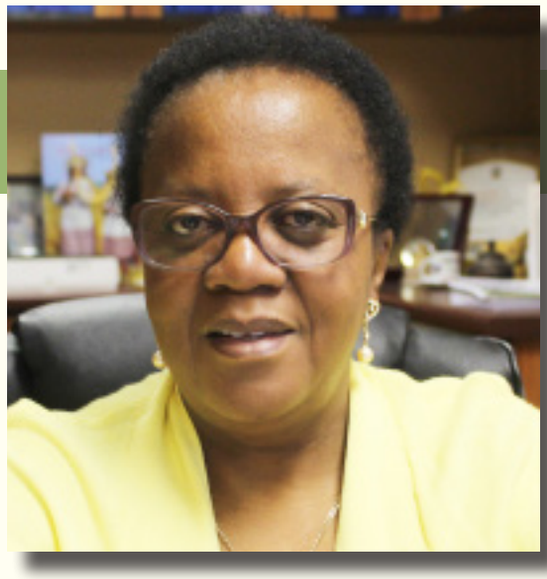
John Mutorwa, MP
Minister

EXECUTIVE SUMMARY BY THE PERMANENT SECRETARY



The Ministry of Agriculture, Water and Forestry, despite unfavourable economic status, continued to promote and manage the sustainable development of agricultural, water and forestry resources nationwide.

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

Namibia was affected by a severe drought during the 2015/16 financial year. Therefore, the Government re-introduced the drought marketing incentive scheme. The lease of grazing incentive scheme and the transportation of livestock incentive scheme were put in place by Government to assist both communal and commercial farmers whose livestock were affected by drought. In that regard, farmers were assisted to market their animals through the scheme, to lease grazing areas and transportation of their livestock to better grazing areas identified by them.

A total of three thousand three hundred and nineteen (3,319) claims were received and processed of which three (3) were from the Northern Communal Areas (NCA) and three thousand three hundred and sixteen (3,316) were from South of the Veterinarian Cordon Fence (SVCF). The value of these claims that were paid out to farmers was N$ 45,083,880.70.
In addition, a total of nineteen (19) claims for transport hire were processed from both NCA and SVCF. The value of the above mentioned claims amounted to N$ 157,659.30.

During the reporting period, 70 tonnes of foundation and two hundred and 280 tonnes of certified seed of improved varieties are produced. There is an ongoing programme with 18 research projects on crop improvement, soil fertility crop diversification and variety evaluation.Different trials on Mutation breeding to develop high yielding and drought resistant varieties of Pearl millet (Pennisetum glaucum L), Sorghum (Sorghum bicolor L Moench) and cowpea (Vigna unguiculata (L) Walp) were conducted that resulted in identification of mutant lines which have been given to selected farmers for on-farm testing in Omusati, Oshana, Oshikoto and Kavango East Regions.
Under the same reporting period, assessment of farmers' preference on the new varieties of cowpeas in Kavango East and Omusati Regions were conducted. The maintenance of released crop varieties of pearl millet, sorghum, cowpea amongst others is ongoing, continued with technical back stopping to registered seed growers for certified seed. In this regard, the Ministry trained 61 registered seed growers in Omusati and Oshikoto Regions and 10 in Kavango East and Kavango West Regions, respectively, for production of certified seed during the next rainy season.

The Ministry signed timber harvesting contracts with contractors in the following community forests: Cuma, George Mukoya, Muduva Nyangana and Okongo. The block permits were issued to the following community forests: Kwandu, Zilitene, Muduva Nyangana, George Mukoya, Cuma, Ncumcara, Ncamagoro, Mbeyo, Katope and Okongo to harvest timber to produce beds, chairs, tables, doors, poles, droppers and firewood. The Ministry generated total revenue of N$ 1,279,478 from timber harvesting.

During the period under review, The Ministry finalised the Namibia Food Safety Policy, which will ensure food safety for all consumers in the Republic of Namibia, and provide sufficient food safety guarantees on all food products traded nationally, or exported to other countries. The Crop Prospects and Household Food Security Assessment were conducted in February/March 2016. This assessment was aimed at providing an overview and provisional estimates of production and planted area. The results of this assessment indicated that drought conditions continued to affect Namibia as most parts of the country noted another poor and below normal rainfall performance for the 2015/2016 rainfall season.

During the period under review, eight new co-operatives were provisionally registered. Also, the business plans of other eight Co-operatives were received for review by the DCDR. The finalization of these plans would enable the Co-operatives to apply for full registration

The Co-operative College, which is a set of courses offered by the DCDR, is established to provide education and training to co-operative members, employees and stakeholders in co-operative development.

Through the Ministry of Agriculture, Water and Forestry, Namibia was granted historical freedom from Peste des Petits Ruminants (PPR) in the south of the Veterinary Cordon Fence (VCF) by the World Organisation for Animal Health (OIE) at the General Session of the World Assembly of Delegates in May 2015. At the same session the OIE endorsed Namibia's Foot and Mouth Disease (FMD) and Contagious Bovine Pleuropneumonia (CBPP) or Lung sickness Control Programmes.

These programmes are road maps for achieving FMD freedom in the protection zone and CBPP freedom in the entire Northern Communal Areas (NCA). 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.

The Ministry of Agriculture, Water and Forestry and The General Administration of Quality Supervision, Inspection and Quarantine of The People's Republic of China signed a protocol on quarantine and veterinary health conditions of beef to be exported from Namibia to China.

Furthermore, a total of about 680 monitoring boreholes were monitored for ground water level twice in the financial year 2015/16 and the data are 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, and Kunene, Otjozondjupa, Oshikoto, Khomas, Erongo, Omaheke, Hardap, and //Karas region have boreholes measured manually and some installed with digital recorders.

Meanwhile, 105 Water Points were rehabilitated, 135 Boreholes installed, 80 boreholes rehabilitated and 54 small pipelines constructed as had been identified by all regions.

Additionally, the Ministry completed the construction of the Katima Mulilo – Ngoma Water Supply Scheme Phase 2 and water supply pipeline to displaced communities in Kavango East Region and commissioned during the period under review. The construction of the following Water Supply Schemes are continuing: Katima Mulilo – Kongola Water Supply Project Phase 2, Omuntele pipeline extension and Iitapa – Okeeholongo Water Supply Scheme.

In conclusion, without the Ministry of Agriculture, Water and Forestry staff members, the Ministry is unable to accomplish great achievements to date, hence I wish to extend my sincere gratitude and appreciation for their unwavering commitment to serving Namibian people through this Ministry.

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Sophia Kasheeta
Acting Permanent Secretary

DEPARTMENT OF AGRICULTURE DEVELOPMENT

DIRECTORATE OF AGRICULTURE PRODUCTION EXTENSION AND ENGINEERING SERVICES

OBJECTIVES

The main objectives of Directorate of 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 and implement technological needs and requirements in the areas of agronomy, mechanisation, irrigation, animal husbandry, soil conservation, water supply and agricultural structures
- 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

The Directorate of Extension and Engineering Services is comprised of two divisions: Agricultural Extension Services, and Engineering Services. The major achievements of the two divisions are outlined in this report below.

1. 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, communications, and advice throughout the country, using a participatory approach that places responsibilities of the development process in the hands of rural communities.

Rain Fed Crop Production Programme

The Dry Land Crop Production Programme to increase food production was implemented in the following regions: Kavango East and West, Zambezi, Oshikoto, Oshana, Ohangwena, Omusati, Kunene North and partly in Otjozondjupa and Omahake. Through this programme, farmers were assisted with subsidized farm inputs (fertilizers and improved seeds) and agricultural services (ploughing and weeding services).

Fertilizer Distribution

- A total of 607 tonnes of different type of fertilizers [NPK 2:3:2 (37%), MAP (0.7% Zinc), Ammonium Sulphate (21%nitrogen), LAN (28%Nitrogen), UREA (46%), Superphosphate (18-21% Ca)] were acquired by MAWF and distributed in the crop growing regions as part of Government subsidy during 2015/2016 cropping season.
- During the cropping season of 2014/2015, a total of4011, (1,787 male and 2,224 female) farmers benefited from the fertilizer subsidy.

Seed Distribution

- During the 2015/2016 cropping season, free seeds were distributed to farmers in Kavango East, Kavango West, Zambezi, Omusati, Oshikoto, Oshana, Ohangwena, Kunene North, Omaheke and Otjozondjupa regions. Twenty tonnes of cowpea seeds, 82 tonnes of maize, and one hundred twenty three (123) tonnes Mahangu seeds were distributed. A total of 21,328 benefited from free seeds (Female 12,512 and Male 8,816).
- Government distributed additional 60 tonnes of mahangu seed and 26 tonnes of maize seed through Government subsidy to the above mentioned regions. During 2014/15 cropping season 18,523 farmers benefited from this distribution (female 10,583 and male 7,940)

Ploughing Services

- Three hundred and twenty six contractual tractor drivers and 49 DAPEES staff members (operator drivers and extension field staff) were trained in basic tractor mechanics, tractor and implement repair and maintenance, field measurement, recording of data and filling of log books, at Ndonga Linena and Mashare Agricultural Development Institute during the period under review.

- During the 2014/15 cropping season, 10, 134 (4,883 male and 5,251 female) farmers benefited from the ploughing services.
- Meanwhile, a total of 17,583 hectares were ploughed during the same year.
- A total of 400 temporary jobs were created through the employment of private tractor and draught animal power owners and Government contractual tractor drivers who rendered ploughing services to farmers through Government subsidy alongside GRN tractors.

Weeding Services

- During the 2014/2015 cropping season 1,451 farmers (534 male and 917 female) benefited from the weeding services.
- Three thousand and seventy seven hectares (3,077 ha) of farmers' fields were weeded. Through the provision of weeding services to farmers, MAWF created 1701 temporary jobs (781 male and 920 female) for unemployed youth.

Conservation Agriculture Achievements

- Completion of the National Stakeholder Consultation process, followed by the finalization and official launching of the Comprehensive Conservation Agriculture Programme of Namibia.
- Successful mobilization of external recourses (N$20mil) from GIZ, SCORE, NAFOLA, FAO and EU to support MAWF in the implementation of CA.
- Successful hosting of the 2015 National CA Stakeholders Conference attended by 230 participants representing 73 institutions.
- Adoption of the CA coordination framework by all stakeholders in Namibia, and the institutionalization of the National CA Forum comprising of 25 stakeholders and chaired by MAWF.
- Establishment of the Kavango East, Kavango West and Zambezi CA Regional Forums.
- Conducted a CA learning and exposure visit to Zambia by 30 frontline officers representing 8 institutions, which stimulated public and private sector interest for collaboration in Namibia.
- Initiation of a CA baseline study to compile and analyse existing data, draw lessons and plan for accelerated implementation in all crop growing regions.
- Development of standards and guidelines for CA Monitoring and Evaluation initiated based on international FAO guidelines.
- Awareness and advocacy interventions initiated with the development of a CA brief, leaflets, and poster outlining principles (57,000 copies in print).
- Recruitment of accredited CA trainers initiated to develop appropriate training manuals for extension staff and farmers, whilst the training needs assessment among all frontline officers has been initiated.
- Procured a variety of CA equipment, including tractors, implements and tools valued at N$6 million.
- Initiated the drafting of a CA Communication and Visibility plan to guide stakeholders in CA messaging and effective communication.
- Secured on-farm and on-station demonstration plots for practical showcasing of CA practices to farmers, and currentlyin the process of completing renovations and equipping training facilities at Mashare.

Horticulture Production

Support to Urban and Peri-urban Horticulture

- In the quest to contribute to increased food production, improve household food security and employment creation, MAWF continued to support the existing gardens and the newly established gardens by providing training and technical advice to farmers and communities in the regions. This extension support is very important to encourage farmers and communities at large to assure them of the support they need to produce food for their livelihood and also for income generating.
  In that regard, 454 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 21 new gardens were established.

Migrant Pest Management

- There were no pests or diseases outbreak reported in the country during the period under review.

Cereal Production

Mahangu Championship

- Due to the drought no Mahangu championship was held, however the Mahangu National forum was held at Omuthiya in Oshikoto region. Twenty one farmers and eight DAPEES staff members from Ohangwena, Omusati and Oshana attended the forum.

Livestock Production

MAWF Ram and Bull Support Scheme

- A total of 420 (400 ewes and 20 rams) were received for distribution in Oshana region and were kept at Okapya Livestock Development Centre (OLDC). Out of the total, 102 ewes and 14 rams died due to diseases. Twelve kids (7 ewes and 5 rams) were born. Replacements are currently underway.

Swakara Scheme

- The Southern Division of Omaheke, Karas and Hardap received 100 ewes and nine rams. Only 16 applications were received, even though the application process was open for the entire communal and resettlement farmers in the Southern division. From applications received, five male beneficiaries were selected to receive 20 ewes and 1 ram each, four female beneficiaries were selected to receive 4 rams.

Poultry distribution and development of small scale farme

- Three thousand seven hundred and thirty five (3 745) one day old chicks were distributed to 209 beneficiaries in Omaheke and Karas regions in order to improve household food security.

Livestock Marketing

Auction Events

- One hundred and twenty (120) livestock auctions took place in the Otjozondjupa region (Okahandja, Otjiwarongo, Otavi and Grootfontein), Agra, whereby on average 1,800 cattle and 160 small stock were sold with a turnover of more than N$9 million per auction for both large and small Stock.
- Auctions and permit days were also held in the communal farming areas such as Okakarara, Okondjatu, Okamatapati, Otjituuo, Ovitoto and Gam.

Drought marketing incentives schemes for both large stock and small stock

- Namibia was affected by a severe drought during the 2015/16 financial year, therefore the Govern ment re-introduced the drought marketing incentive scheme. The lease of grazing incentive scheme and the transportation of livestock incentive scheme were put in place by Government to assist both communal and commercial farmers whose livestock were affected by drought. In that regard, farmers were assisted to market their animals through the scheme, to lease grazing areas, and transportation of their livestock to better grazing areas identified by them.
- A total of 3,319 claims were received and processed of which threewere from the Northern Communal Areas (NCA) and 3,316 were from South of the Veterinarian Cordon Fence (SVCF). The value of these claims that were paid out to farmers was N$ 45,083,880.70.
- In addition, a total of 19 claims for transport hire were processed from both NCA and SVCF. The value of the above mentioned claims amounted to N$ 157,659.30.

Challenges

- Insufficient information provided by farmers, such as branch codes for banks,
- Lack of proof of payment for out of hand transactions, making it difficult to process claims,
- Constant physical enquiries by the farmers, affecting the time taken to process claims,

Farmers Advice and Training

- Provision of continuous training and advice to farmers to enhance their capacity so that they are better equipped to produce healthier crops and increase yields in order to reduce food imports and also ensure food security. As such, a total of 9,889 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, land preparation, fruit fly surveillance, soil fertility, draught animal power, rangeland man agement, jam making from marula fruits, drought mitigation strategies, bush encroachment, record keeping and livestock marketing amongst others.

Training of DAPEES staff in technical and managerial fields

- In order to ensure a well-trained and competent team of field extension staff in the country, staff members received in-service training courses nationally and abroad to equip themselves with the necessary skills and knowledge to be able to address the needs of the farmers effectively.
- A total of 93 extension staff received training in Good Agricultural Practice, Hazard Analysis Criti cal Control Point, land subdivision, Phytosanitary, dry-land crop production and production economics and rangeland management amongst others.

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 show farmers how to perform manipulative operations and by getting them to learn by doing.
- Consequently, 60 on-farm demonstrations for both livestock and crops were conducted in all regions in the country with 3,340 farmers attending.
- The demonstrations focused on livestock and crop husbandry, crop production, land preparation, conservation agriculture, grazing plan, supplementary feeds and licks, weed control, horticulture pro duction, fertilizer application, compost making amongst others.

Community-Based Organizations

- Community Based Organizations play an important role in providing services at a local level and are also an integral part of Governments community service delivery system to improve communities' livelihoods. In this regard, 14 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 respectively.
  DAPEES facilitated the formation of farmers' leagues at Uis and Okombahe areas. In addition, a total of 10 of the existing CBOs were supported. Several meetings were held with ≠Eseb Farmers' Association at Okombahe to discuss drought issues and possible mitigation strategies. Spitzkoppe Farmers' Association was advised on financial management and the importance of opening a bank account.

Farm Visits

- A total of 1,444 farms were visited by DAPEES field staff in the regions reaching a total number of 1,979 farmers.
- The main purpose of these visits were to provide advisory services, disseminate information, and monitor and assess progress on project implementation and farming activities of the Resettled, Affirmative Action Loan Scheme farmers (AALS), communal and commercial farmers, and villages in the region.
- Amongst others, information and advice was provided in 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 to the villages.

Farmer visits to Agricultural Development Centers

- Farmers in the regions took their own initiative to visit MAWF Agricultural Development Centers (ADCs) and our Agricultural Regional Offices to get information and advice and for the provision of agricultural inputs and services.
- A total of 13,693 farmers, including emerging and commercial farmers, visited the Agricultural Development Centers (ADCs) seeking information and services, which were mainly on agricultural in puts and services, drought incentive schemes, livestock import permits, Agribank loan scheme, phy to-sanitary 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.

Emerging Commercial Farmers

- Technical support and advice was rendered to 35 resettled and emerging commercial farmers. The type of support rendered included: farm planning, bush encroachment mitigation, rangeland management, horticulture production, selection of breeding animals, drought mitigation strategies, and farm finances.

Exposure Trips

- Several DAPEES, NNFU, DART, DOF, NNFU, AGRIBUSDEV, AMTA, SCORE, FAO staff undertook an exposure trip to Zambia in order to learn about conservation agriculture. Some farmers were exposed to other farms in the region. Twelve farmers from Okahandja visited the Okakarara Poultry farmer in order to observe and learn from the farmer on farming techniques. Otjituuo and Coblenz San Community garden members were exposed to commercial farms (Schonau and Schalzfeld) for horticulture information and demonstrations to commercial farms. Another purpose of these visits were for farmers to familiarize themselves with other farming practices, what other agricultural institutions are doing, and to learn and gain experiences through observing.

Mass and Print Media

- The DAPEES disseminated information through radio, agricultural newsletters, pamphlets and leaflets in the regions. The information disseminated to farmers was on the agricultural activities such as Swakara training, livestock diseases, livestock marketing, effects of drought on livestock, DCPP, drought relief, seed distribution, predator control, drenching small stock, vaccination program, rangeland management, bush encroachment, safe handling of pesticides, livestock branding, agricultural cooperatives, gardening, lick supplements, and livestock management calendar.
- Two leaflets (One DCPP and one on Production Economics) are being finalized for distribution to farmers.

Farmer's Information Days

- One hundred and fifty information days were organized by extension field staff in collaboration with other stakeholders to sensitize farmers on various agricultural practices in the regions.
- Three thousand one hundred and four (3 104) farmers attended these field days. The topics covered were on-veld evaluation, planting of grass fodder, lick supplementation, rangeland management, Government drought incentive schemes, DCPP, walking tractors, fish farming, conservation agriculture, boar goat management, Swakara farming system, livestock marketing, agricultural inputs and services, and the Agribank loan scheme.

Phyto-sanitary Services

- The Division carried out compliance inspections for agricultural inputs on retailers, farm storage facilities and distributors in order to establish if the agricultural inputs are registered and stored safely. Furthermore the Division also continued to carry out Phytosanitary inspections on farms that are exporting crops to ensure that production procedures are conforming to international standards.The Division carried out compliance inspections on retailers, farm storage facilities and distributors, including 32 facilities for pesticides, 29 facilities for fertilizers, and 12 for farm feeds. The compliance inspections looked at whether the agricultural inputs are registered and if the storage and handling thereof is of the required standards. The Division has also introduced a permit system for all agricultural inputs, this is to ensure that the establishments selling and storing this inputs are licensed and fit to sell the products in question before importation is authorized. A database of registered and imported pesticides, fertilizer and farm feeds was compiled and updated for traceability purposes.
- Three hundred and forty one (341) new registrations were done for fertilizers, farm feeds and agricultural remedies and 2,895 were renewed. An amount of N$ 1 006 617 was generated from registration and renewal of fertilizer, farm feeds and agricultural remedies in line with Act 36 of 1947.
- Fourteen thousand and sixty seven (14 067) Phytosanitary certificates, import and in-transit permits were issued for the exportation and importation of plant and plant products. An amount of N$ 2, 110, and 050 was generated from the issuance of Phytosanitary certificates, 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 on the Management of the Asian fruit Fly (Bactrocera dorsalis) in Namibia. The project site is in the Zambezi Region but activities have been extended to other areas as well e.g. Training of Trainers, surveillance and awareness. Site selection was done in conjunction with extension services, rural headman and farmers. Traps were deployed at every port of entry in the project areas, at Agriculture Development Centres, along the Zambezi River and inland, at farmers' orchards and gardens. Monitoring has been on-going with farmer's and extension staff to monitor the population dynamics of the fruit fly. Traps are serviced or baited on a six week program. Awareness campaigns were conducted in schools and at Agricultural shows to inform the public about the devastation of the fruit fly. A National Surveillance Programme is underway throughout the country.

- Two officials were trained at the International Centre of Insect Physiology and Ecology (ICIPE), Kenya on Fruit fly monitoring, identification and management. The aforementioned training has improved knowledge on identification and management of fruit flies and this have been imparted to stakeholders and farmers through TOTs and information sharing sessions. Seventy five (75) Trainer of Trainers were trained as Trainers. In return 729 farmers and stakeholders were trained. The training of farmers is still an ongoing process. Under the Technical Cooperation Programme (TCP) T-shirts, banners, augumentoriums, rearing cages, Bio pesticides, Invader block, and field manuals were received from ICIPE, Kenya, for support in managing the fruit fly and awareness. Under the TCP, some of the materials were procured, the IPM components, which includes: Male Annihilation Technique (Methyl Euge nol, Terpinyl acetate, Cuelure, Trimedlure), laptops, USB microscopes, Trap buckets, ethanol, lab bins etc. So far US$ 71,788, 00 is left and to be used before the end of project on 31st December 2016.
- The Division is currently implementing another project funded by FAO on strengthening controls of food safety threats, plant and animal pests and diseases for agricultural productivity and trade in Southern Africa. 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 500 serviced traps across the country as part of control measures against the pest and monitoring is ongoing every sixth weeks. As part of this project, a Training Workshop on Epizootic Ulcerative Syndrome (EUS) biology, pathology, diagnostics and design of an active surveillance programme, was conducted in Lusaka, Zambia. 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.
- Forty One (41) applications for the Sub-division of Agricultural Land under Act 5 of 1,081 were received and processed during the 2015/16 financial year.
- A total of 120 fruit fly surveillance visits were conducted in Otjozondjupa, Omusati, Oshikoto, Oshana, Zambezi, Kavango East and West, Hardap and //Karas regions.
- The Division has submitted a proposal for the management of the obsolete pesticides project to FAO. The project is to be jointly funded by FAO and the MAWF. The Division expects the project to commence during the next financial year (2016/17), depending on the availability of funds. This project will assist the country in dealing with obsolete pesticides which are a problem to human and environmental health if not disposed of correctly.
- The Division continues to assist communities in the establishment of vegetable gardens. To date 12 new vegetable gardens were established.
- The Division continues to train farmers on the importance of gardening, soil management (soil preparation, general gardening practices, watering, cultivars spacing), sowing and seeding, seasonal calendar period (a crop guide that allows you to know which season is appropriate to grow a certain crop), compost making (organic preparation of alternative fertilizers for growth), crop protection (methods for the control of insects, diseases, weed and animals), crop rotation and marketing of vegetables, and record keeping for production.

2. DIVISION OF ENGINEERING SERVICES

MAJOR ACHIEVEMENTS

- Assisted with the management and operation of the Green Scheme Irrigation Projects, namely: Sikodo, Shadikongoro, Uvhungu-vhungu, Ndonga-Linena, Musese, Etunda, Hardap, Tandjieskoppe, Kalimbeza, and Orange River Irrigation Project (ORIP).
- Supervised the construction of boundary fences, water supply, milking parlour & cow housing, renovations to existing buildings, new buildings, green houses, bulk & low voltage electrical supply at Uvhungu-vhungu Irrigation and Dairy project.
- Supervised the installation of an oil processing plant, wheat milling plant and 4000 MT silos at Shadikongoro Irrigation Project.
- Supervised the construction of net houses at Sikondo Irrigation Project.
- Supervised the construction of small scale farmers' house at Musese Irrigation Scheme.
- Supervised the construction of roads and pump station at Musese Irrigation Scheme.
- Supervised the construction of Bulk Water Pipeline and Irrigation systems at Musese Irrigation Scheme.
- Supervised the construction of Phase 1 of the Fresh Produce Marketing Hubs in Wanaheda, Windhoek.
- Supervised of the construction of the Agricultural Technology Centres at Ongwediva.
- Supervised the construction of de-bushing, irrigation, pumpstation, medium and low voltage electrical supply at Mashare Irrigation Project Phase Two.
- Supervised the construction of Ndonga Linena Irrigation Phase Two.

CAPITAL PROJECTS

Construction of ADCs

- The construction of the Eunda ADC in Omusati region is 40% completed.
- The construction of the Endola two bedroom house and Ondobe office complex are completed.
- Construction of Marketing Facilities (Auction kraals)
- One auction kraal at Ompundja in Omusati has been constructed and will be in use during the next financial year (2016/2017.
- The Small Stock Development and Distribution in Communal Areas Project (SSDDCAs)
  The Small Stock Development and Distribution in Communal Areas Project is a follow-up phase of the Small Stock and Bee Production Support Program (SSBPSP) that was implemented in the Southern Division.
- A total of 420 goats were distributed to 20 beneficiaries in Kavango West region during May 2015. The Hon Minister of Agriculture, Water and Forestry conducted the hand-over of the goats to the beneficiaries.
- The Ministry has procured 840 goats and they will be distributed to 40 identified beneficiaries in Oshana and Kunene south regions by the end of March 2017.

Development of Agricultural Technology Centre

- The Rundu Agricultural Technology center is now operational and it has been equipped with a lathe, milling machine, guillote (cutting metals) and pipe bender for total amount of N$ 7 million.
- The Ongwediva Agricultural Technology Centre is 75% completed.

Establishment of Plant Health and Biosecurity Laboratory

- The technical drawings for the Laboratory are finalized.
- The bulk earthworks are 60% completed and this is expected to be finalized by end of March 2017.

Green Scheme

- The construction of four medium scale farmer's houses, fertilizer shed and chemical store at Ndonga Linena Irrigation Project Phase Two was completed.
- The installation of 2000 MT silos at Ndonga Linena Irrigation Project was completed.
- The installation of an oil processing plant, wheat milling plant and 7000 MT silos at Shadikongoro Irrigation Project was completed.
- The construction of bulk pipeline and pump station at Mashare Irrigation project Phase Two was completed.
- Construction of net houses at Sikondo Irrigation Project was completed.
- The acquisition of a 28 tonne crawler dozer for de-bushing purposes was finalised.
- The Construction of a pump station at Uvhungu-Vhungu Dairy Farm was completed.
- The Construction of ten small scale farmers' houses and bulk electricity at Musese Irrigation Project was completed.

Integrated Grain Storage

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

National Horticulture Development Initiative

- Started with the construction of the bulk earthworks for the Windhoek, Wanaheda Fresh Produce Hub and it is on-going.
- The bulk earthworks for second phase at the Fresh Produce Marketing Hubs at Ongwediva and Rundu were completed.
- Designs and compilation of drawings for second phase additional infrastructure (open market, filling station, and parking area) at the Ongwediva and Rundu Hubs were completed.

Kalimbeza Rice Irrigation Project

- The construction of the machinery shed, fertilizer shed, chemical store, fencing, gate house, interlocking paving, change room and tuck shop are 70% complete.

DIRECTORATE OF VETERINARY SERVICE

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 Directorate of Veterinary Services successfully carried out its mission during the year under review. Existing markets for livestock and livestock products were maintained except the loss of the South African market for beef from the FMD Protection Zone following the outbreak of Foot and Mouth Disease in that area between May and July 2015. However new markets were explored. The severe drought conditions experienced across the country caused many livestock losses.

1. Animal Health Status

Namibia was granted historical freedom from Peste des petits ruminants (PPR) in the south of the Veterinary Cordon Fence (VCF) by the World Organisation for Animal Health (OIE) at the General Session of the World Assembly of Delegates in May 2015. At the same session the OIE endorsed Namibia's Foot and Mouth Disease (FMD) and Contagious Bovine Pleuropneumonia (CBPP) or Lungsickness Control Programmes. These programmes are road maps for achieving FMD freedom in the protection zone and CBPP freedom in the entire Northern Communal Areas (NCA).
The OIE Scientific Commission for Animal Diseases (Scientific Commission) concluded that Namibia fulfils the requirements to be recognised as having a negligible risk for Bovine Spongiform Encephalopathy (BSE) in accordance with Article 11.4.3 of the OIE Terrestrial Animal Health Code (Terrestrial Code) and recommended its recognition by the OIE World Assembly of Delegates at the 84th General Session in May 2016. The same Scientific Commission also concluded that the zone of Namibia located south of the Veterinary Cordon Fence fulfils requirements to be recognised by the OIE as a CBPP free zone, in accordance with Article 11.7.3 of the Terrestrial Code and recommended its recognition by the OIE World Assembly of Delegates at the 84th General Session in May 2016.

2. Restructuring

Although the new DVS structure was approved with effect on 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 sanitary and phyto-sanitary 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 1174. Recruitment of personnel into the remaining posts created by the restructuring exercise will be done over the next two financial years (2016/17 and 2017/18).

3. Infrastructural development

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

(i) The Construction of Veterinary Clinics, Offices and Accommodation, including that of 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:

- Construction of Chief Veterinarian, Central and Traceability offices in Windhoek is underway.
- Construction of a State Veterinary Office at Okahao, offices and staff accommodation at Tses, in the //Karas region at Okalongo, Ruacana, Ndiyona and Ncaute is in progress. Construction of staff houses at Epembe and Omundaungilo was completed. Construction of veterinary clinics and accommodation at Engombe in Omusati Region, Onamishu in Oshikoto Region and Ruacana in Kunene Region was completed.
- 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.
- Construction of offices, staff accommodation and animal handling facilities and at Oronditi, Swaartbooisdrift, Wenela, Kasamane, Mahenene, Dobe and Katwitwi borders is underway.
- The Eenhana and Outapi abattoirs which are part of the Beef Value Chain project in the Northern Communal Areas have been upgraded.Construction of Rundu abattoir and cold storage is underway. Construction of Cold storage facility and meat processing at Ongwediva Fresh Produce Hub was implemented.
- The Zambezi Regional Council availed land to MAWF at Bukalo Village Council to erect an abattoir, cold storage and a meat processing/cooking facility for value added products. A tender for the Environmental Impact Assessment for the Bukalo project is with Ministry of Works and Transport.

- Construction of the Biosecurity Level 3 laboratory at the Central Veterinary Laboratory was completed. A groundbreaking ceremony was held for the construction of the Veterinary Laboratory and state veterinary office in Ondangwa. The site for the construction of the Eenhana Research Laboratory has been identified and fenced-off.

4. FMD and CBPP Freedom Project

Following the OIE endorsement of the FMD and CBPP Control Programmes in May 2015, implementation of the FMD and CBPP Freedom Project started. The OIE approved the annual reconfirmation of the FMD and CBPP Control Programme submitted in March 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) 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 putting a strain on our directorate.

5.1 Republic of South Africa

Bilateral meetings at technical and political levels were held with South Africa in March 2016 to resolve the issue of the impending stringent new import requirements for export of cattle and small stock to that country. Despite these meetings the South African veterinary authorities gazetted the new stringent import requirements to be implemented with effect from 1 July 2016. This development will adversely affect livestock exports particularly cattle that will require pre-testing for tuberculosis and brucellosis, among other diseases, before export.

5.2 USA

Namibia awaits the rule making process by the United States government, which will lead to opening of exports of meat to that country after passing the audit which looked at the six equivalence components: government oversight, statutory authority and food safety regulations, sanitation, Hazard Analysis and Critical Control Point System (HACCP), chemical residues and microbiological testing programs.

5.3 European Union Audit

DVS will be expecting an audit from the European Union early next year since it did not happen during the year under review while the last EU audit was in 2013. All the necessary preparations are underway for the next EU audit.

5.4 China

The Ministry of Agriculture, Water and Forestry and The General Administration of Quality Supervision, Inspection and Quarantine of The People's Republic of China signed a protocol on quarantine and veterinary health conditions of beef to be exported from Namibia to China. Subsequently a team of auditors from China came for inspection in January 2016 and approved exports of bone-in beef from Meatco Windhoek and Okahandja abattoirs.

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 satisfied. Meatco Windhoek and Okahandja abattoirs were approved for export of bone in beef to Hong Kong. Namibia awaits the final approval of the health certificate for export of beef to Hong Kong.

5.6 Russia

Namibia has been approved to export beef and lamb to the Russian Federation. Commencement of exports awaits Russia's approval of model export certificates with special security features that we have developed.

5.7 Angola

Namibia and Angola met at Ondangwa, 15-16 September 2015 to discuss and harmonise control measures on Foot and Mouth Disease outbreaks experienced by both countries. The two countries met again in October 2015 under the auspices of the Permanent Joint Commission for Defence and Security. At that meeting, the two countries endorsed the erection of a border fence between the two countries to control livestock movements across the common border. The two countries agreed to share information on disease surveillance across the common border. Namibia promised to assist with 400,000 doses of the FMD vaccine. The two countries met again in Ongwediva, 1-3 February 2016, to review progress on the control of FMD and discuss areas of cooperation along the common border concerning disease control and cross border trade.

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%

6. Internal Audits

All export abattoirs were audited internally with no de-listings for export to the markets they are listed for. One abattoir applied for beef exports to Europe, but due to several shortcomings and slow corrections, the process was delayed. The NamLITS office conducted a series of internal audits countrywide.

7. The livestock population

The annual livestock census conducted in 2015 showed a decline in all species except poultry. The possible reason for this decline in cattle, sheep, goats and donkeys was the drought, which caused deaths and also forced many farmers to destock. The changes are highlighted in the table below.

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 year with relatively favorable results as no major events were observed. The World Organization for Animal Health (OIE) recognized FMD Free Zone without vaccination was maintained in areas south of the VCF despite the outbreaks of Foot and Mouth Disease in the Infected and Protection Zones from May to July 2016.

Following the development of NamLITS 2, the Animal Health Declaration database was upgraded. A new form, which was under development, was deployed. The form is now integrated with the FAN meat questionnaire.

The Namibian Livestock Identification and Traceability System (NamLITS), which is the backbone of animal disease surveillance, has now been extended to cover the whole country. This system enables government to keep 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. In the 2015/16 financial year, 161,515 additional cattle were tagged in the NCA.

The NamLITS team conducted trainings on livestock identification and traceability both in the NCA and sVCF in 9 sessions. A total of 191 staff drawn from DVS, Directorate of Agricultural Production, Extension and Engineering Services and Namibian Police was trained.

During 2015, 1,977 community visits were done and 1,435 farms inspected, as shown in Table 2 and Table 3 respectively. Mass vaccinations of animals against diseases such as Foot and Mouth Disease, Anthrax (Zambezi Region), Lungsickness and Rabies were carried out during the year. A total of 840 680 cattle were vaccinated against FMD in the infected zone and protection zone with coverage of 84% following the outbreaks of FMD. Meanwhile 1,059,012 cattle were vaccinated in the NCA against Lungsickness. A population of 1,372,453 was targeted for vaccination against Lungsickness. Overall vaccination coverage of 77% was thus achieved. A total of 127,133 cattle were vaccinated against Anthrax in the Zambezi Region out of a target of 140,477, giving a coverage of 91%.

Table 2. Summary of Community Visits

SV District	Total no. of communities in Communal area	No. of Communities visited in December 2015	Running Annual
Zambezi	154	17	147
Kavango	1122	1	596
Grootfontein	42	0	0
Oshikoto	165	0	86
Ohangwena	217	0	10
Oshana	76	2	30
Outapi	428	0	20
Opuwo	228	0	31
Kamanjab	177	0	132
Windhoek	65	0	0
Okakarara	325	0	91
Omaruru	293	0	227
Gobabis	93	0	61
Otjinene	117	0	29
Epukiro	402	0	350
Mariental	63	4	85
Keetmanshoop	159	3	141
Total	4169	27	1977

Table 3. Number of Farm Inspections Conducted

State Vet District	Total no. of farms	Farms inspected in December 2015	Farms not Inspected Running Annual		% Inspected Inspected to Date
Grootfontein	616	30	543	73	88%
Windhoek	571	0	406	165	71%
Okahandja	380	0	286	94	75%
Otjiwarongo	151	0	148	3	98%
Otavi	472	0	149	323	32%
Outjo	450	4	297	153	66%
Kamanjab	177	0	132	45	75%
Omaruru	666	0	517	149	78%
Walvis Bay	26	0	22	4	85%
Gobabis	669	0	232	437	35%
Mariental	1405	12	414	991	29%
Keetmanshoop	1024	38	503	521	49%
Total	6799	84	3510	3289	52%

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.

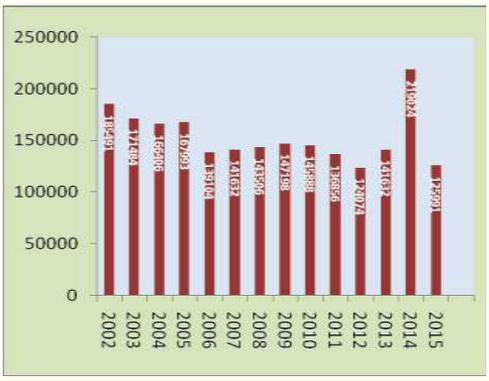


Figure 1. Trends in cattle slaughtered

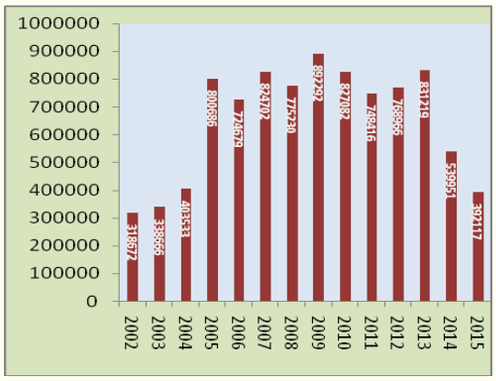


Figure 2. Trends in sheep slaughtered

Major animal disease events reported in the period under review include Foot and Mouth Disease, Lungsickness, Anthrax and Rabies.

8.1. Foot and Mouth Disease

Two outbreaks of Foot and Mouth Disease (FMD) occurred in the Northern Communal Areas of Namibia. The first was in the FMD protection zone in May 2015 affecting Ohangwena, Oshikoto (the part north of the Veterinary Cordon Fence), Kavango East and Omusati Regions. The second outbreak occurred in the FMD infected zone in July 2015 in the Zambezi Region. A total of 255 cases were confirmed from 29 foci. The response to control these outbreaks cost Government a total of N$ 180 million. The costs incurred were mainly for zoning, movement control, decontamination, disease surveillance, awareness creation; procurement of equipment, consumables and vaccines and serial vaccinations of 840,680 cattle (three times) around the infected areas and along the north of the Veterinary Cordon Fence. Two hundred and thirteen (213) permanent staff assisted by 826 temporary staff were deployed to control the outbreak.

The outbreak was closed on 22 January 2016 and its success was due to tremendous support from the Government, livestock farmers, Farmers' Unions, Meat Board of Namibia, Meatco, Traditional Authorities and other stakeholders.

Figure 3. FMD lesions in the mouth and feet of the ca

Contagious bovine pleuropneumonia (CBPP) (Lungsickness)

Eleven cases including five deaths were confirmed from two foci at Ndiyona and Ndonga Linena in Kavango East Region. The incidence of Lungsickness is on the decline as shown in Figure 4. A ring vaccination campaign was launched to control the outbreak.

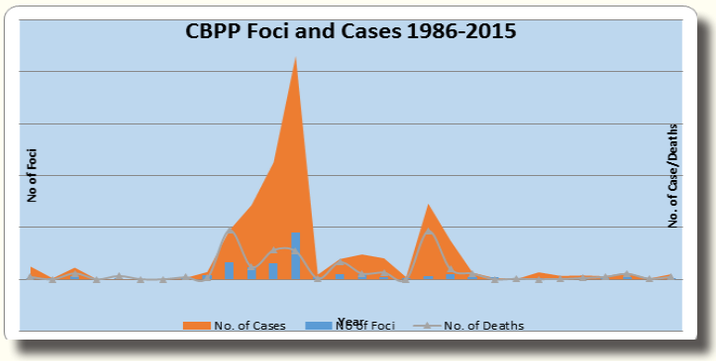


Figure 4. Lungsickness trend from 1986 to 2015

Anthrax

One ox died of anthrax on a commercial farm in Otjiwarongo State Veterinary district. In the commercial farming areas, farmers were advised to vaccinate their domestic livestock routinely.

Rabies

Rabies continues to pose a serious health risk to the public. A total of 356 cases of rabies were confirmed countrywide during the period under review and this represents a decrease of 7% on the 2015 figure. Figures 5 and 6 show the distribution of Rabies cases by state veterinary districts and species.

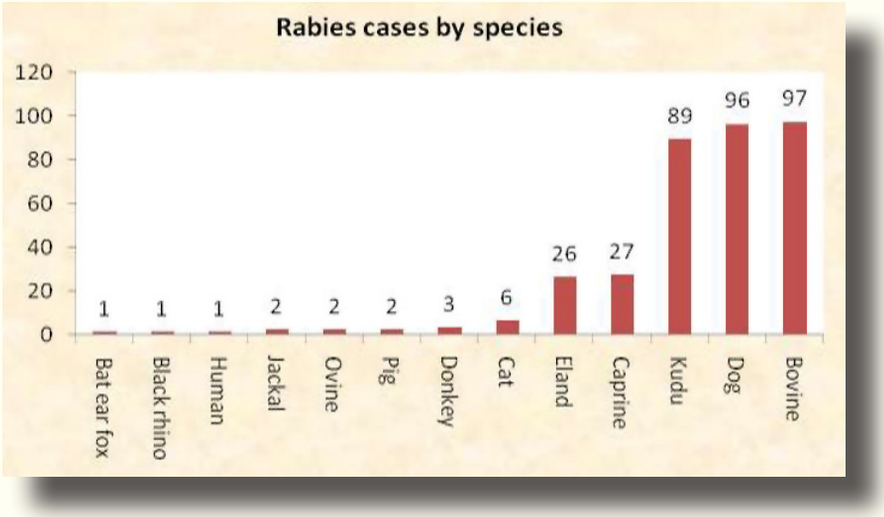


Figure 5. Distribution of rabies cases by species (April 2015 - May 2016)

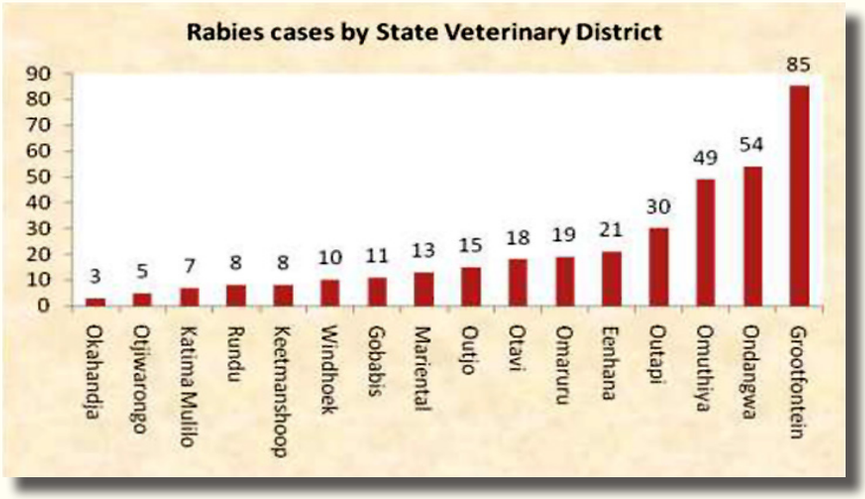


Figure 6.Distribution of rabies cases by State Veterinary District (April 2015 - March 2016)

Other Reported Diseases

Other economically important diseases reported during the year under review included African Horse Sickness, Dourine, Ovine Brucellosis, Sheep Scab, Orf, Bovine Campylobacteriosis, Bovine Trichomoniasis, Lumpy Skin Disease, 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

Objectives

The Main functions of the Divisions of Crop and Livestock Research and Production are to:

- 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 plant and livestock genetic material for future use.

1. Crop Research and Production

The Ministry has registered through the Division of Crop research and production the following achievements:

- The subdivision produced 70 tonnes of foundation and 280 tonnes of certified seed of improved varieties.
- Research is ongoing with 18 research projects on crop improvement, soil fertility crop diversification and variety evaluation.
- Different trials on Mutation breeding to develop high yielding and drought resistant varieties of Pearl millet (Pennisetum glaucum L), Sorghum (Sorghum bicolor L Moench) and cowpea (Vigna unguiculata (L) Walp) were conducted that resulted in identification of mutant lines which have been given to selected farmers for on-farm testing in Omusati, Oshana, Oshikoto and Kavango East.
- The Subdivision conducted an assessment of farmer preference on the new varieties of cowpeas in Kavango East and Omusati.
- The maintenance of released crop varieties of pearl millet, sorghum, cowpea amongst others is ongoing.
- The Subdivision has also continued with technical backstopping to registered seed growers for certified seed. In this regard, the Ministry trained 61 registered seed growers in Omusati and Oshikoto and 10 in Kavango East and Kavango West respectively for production of certified seed during the next rainy season.

Figure 7. Cowpea mutation breeding trials, asparagus trial and seed multiplication undertaken at crop research stations

2. Rangeland Management and Pasture Research

- The Subdivision has successfully established a research trial of selected cultivated pastures species at Okapya Livestock Development Centre.
- A study was conducted on Rangeland Dynamics at increasing distances from the Kavango River browsing and grazing capacity data for three selected areas (Tondoro, Mashare and Divundu) has been completed.

Figure 8. Pictures of rangelenad evaluation for national rangeland audit at Sachinga LDC, Kalahari and Sandveld research stations

3. Large Stock Research

The Subdivision has recorded achievements that include:

- The completion of the DNA Analysis of the Sanga cattle herd at the Sonop Research Station.
- Collection of hair samples for the DNA analysis from the indigenous Sanga/Nguni cattle south of the Veterinary Cordon Fence (VCF).
- Continuation of the successful conservation and development of Sanga, Afrikaner, Bonsmara and Simmentaler cattle.
- As part of its effort to provide farming communities with improved livestock breeding materials, the Ministry, through the Directorate of Agricultural Research and Development, has sold 728 domestic animals at the public auctions conducted at DARD farms and stations, thereby generating an amount of N$1,842,876. This includes 193 cattle and 535 small stock (indigenous goats, Damara sheep, Gellapper sheep, Swakara sheep and Boer goat)

Figure 9. Large stock breeds found at research stations and farms as part of work conducted by MAWF 2015/16

4. Small Stock Research

- This Subdivison successfully concluded the research project on “Evaluation of the Development of the Gellapper sheep at Kalahari Research Station.”
- Furthermore, 150 Swakara farmers were capacitated in Swakara sheep husbandry, and communal farmers were given 155 Swakara Sheep in the Erongo Region and 165 Swakara sheep in Omaheke, //Karas and Haradap Regions through the Swakara Support Scheme.
- Similarly, conservation and development of the Namibia Indigenous, Gellapper sheep, Damara sheep, Swakara sheep, and Boer goats are ongoing.

Figure 10. Indigenous goat, Karakul sheep, and Gellapper sheep breeds being conserved and developed at research stations of MAWF

5. Livestock improvement Schemes

The successes registered under this Subdivision are:

- Testing of 513 young bulls from 13 stud breeders, including stud animals from five Livestock Research Stations under Phase D performance testing scheme.
- Eleven bulls from Livestock Research Stations were tested under Phase C conditions.
- Recording and analysing of data of 111 animals of emerging commercial livestock farmers.
- Secured nine scientific articles for publication in MAWF Scientific Journal (Agricola).

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

During the period under review the Ministry through the Directorate of Agricultural research and Development successfully implemented the activities as follows:

- Conducted a feasibility study for the expansion of the NBRI and bulk earthworks at the National Research Botanical Institute (NBRI), upgrading of oxidation ponds at Kalahari Research Station, commencing with upgrading of the irrigation system, installation of a submersible water pump, and continuing with the construction for the expansion of the office Block at Bagani Research Station.
- Furthermore, feasibility studies for the upgrading of the former Chief Agriculture Training Officer house into a guess house took place, and upgrading and expansion of the slaughter house, poultry unit and upgrading of animal handling facilities were undertaken while the administration office block and 6 x 3 bedroom houses were renovated at Mashare Agricultural Development Institute (MADI).
- In addition, 4 x 1-bedroomed flats were renovated while an existing building was upgraded at MITC form new grain storage.
- Notably, progress has been made towards efforts in addressing lack of staff accommodation at various farms and research stations, as the Ministry has constructed 2 x 2 -bedroom houses each at Sachinga Livestock Development Centre, Tsumkwe Breeding Station, Okomumbonde Breeding Station and Omahenene Research Station.

- Water reticulation for animal facilities and to staff houses was completed at Tsumkwe and Okomumbonde Breeding Stations, as well as Sonop Research Station.
- Further to this, 1 x 3 bedroom houses each were constructed at Tsumkwe Breeding Station, Okomumbonde Breeding Station, while 4 x 1 bedroom flats and 1 x 3- bedroom were renovated at Omahenene Research Station and Sachinga Livestock Development Centre. In addition, 2 x 2 bedroom houses with garages were constructed at the Okashana Research Station.
- The Ministry successfully constructed a 25 KVA power line to Okapya Livestock Development Centre and Oshaambelo Livestock Development Centre respectively the two Centres are now connected to national electricity grid. Similarly, an old farm building was upgraded into a guesthouse while a shed into a workshop, offices and store rooms Okapya Livestock Development Centre.

Figure 11. Electrification of Okapaya LDC, 2x2 bedroom houses at Okashana R/Sand and electrification at Oshaambelo LDC

7. Planned activities for 2016/17

In line with the Annual work Plan, the Ministry through the Divisions of Crop and Livestock Research and Production will embark upon the following research and research-related activities/projects, chief among them are the following:

- Production of both foundation and certified seed of pearl millet, sorghum, maize and cowpea, crop improvement e.g. mutation breeding, yield, tolerance to pests and diseases and drought resistance; soil fertility improvement, crop diversification.
- Value addition to indigenous plants.
- Research on conservation agriculture technology.
- Assessment of the physio-chemical properties and characterization of the soils of Kalimbeza rice field.
- Egro-ecological zoning.
- Eight research papers for publication in the Agricola.
- Conservation of Dorper sheep, the Namibia indigenous goats and chickens, and the recessive white Swakara sheep.

- Research on the sub-vitality gene in white Swakara Sheep,meat and carcass characterization of the Namibia indigenous goatss
- Reproduction performance of the Damara sheep lines.
- Gellapper sheep multiplication.
- Comparison of different mating seasons in Simmentaler cattle.
- Collecting of hair samples from indigenous cattle north of Veterinary Cordon Fence for DNA analysis.
- Mapping the distribution of encroacher bush in southern Namibia; determine browse capacities in North-Central.
- Establishment of a tested and accepted methodology for local biomass assessment in collaboration with the University of the Free State.
- Data collection on planted cultivated pasture at Okapya Livestock Development Centre; Phase D Performance Testing.
- Conservation of adapted breeds/ecotypes.
- Provision of improved animal genetic materials to the farming community through public auctions and specialized schemes.

The Ministry also envisages revising and re-implementing Specialised Livestock Improvement Scheme, commencing with Phase 3 of the bush encroachment mapping project in Northern Namibia, the finalization of Southern Bush Encroachment map, continuing surveys to test the influence of the fodder bank grazing system on the herbaceous biomass, as well as the botanical composition of the Camelthorn Savanna (at Sandveld Research Station), and provide backstopping to the Namibia Agricultural Union with a national rangeland Audit as part of the Namibia Rangeland Policy and Strategy implementation strategy. It also envisages to continue with staff development, non-formal and farmer training on agricultural related disciplines. It aims to distribute research information through publication and information days, commence with the Vocational Education Training in agriculture at TAZAC and MADI, andcontinue with the ISO 17025 towards the compliance regulations.

8. Planned activities for Capital Project for 2016/17

- Renovate and upgrade the guesthouse at MADI.
- Commence with the construction of the SASSCAL building at NBRI.
- Complete the new office block at Bagani Research Station.
- Continue with seed multiplication of improved seed varieties at the Green Scheme projects, MADI and research stations.

Division of Product Development, Training and Quality Assurance

[Recurrent Budget: N$ 21 747 000]

Objectives

The main function of the Divisions: Product Development, Training and Quality Assurance is support the development of adequate, well-trained human resources required for the sustainable development of the agricultural, water and forestry sectors in Namibia.

9. Subdivision Training Development

Due to budgetary constraints, the Ministry could not advertise bursaries to the public but opted rather to continue supporting the current bursary holders and staff members conducitng studies in critical areas of the agricultural, water and forestry sectors. However, it is gratifying to report that during the period under review, 12 bursary holders successfully completed their studies at different levels as follows Diploma in Analytical Chemistry (1), BSc Bio-Medical Science (1), BSc Forestry (2), B. Honours in Information Technology and Business Computing (1), Post Graduate Diploma in Integrated Water Resource Management (1) and BVSc Veterinary Medicine (6).

Similarly, 27 bursary holders are progressing well with their studies as follows: MSc Biotechnology (1), MSc Agricultural Economics (2), Applied Mathematics and Statistics (2), MSc Biochemistry (1), MSc Civil Engineering (3), BTech Civil Engineering (2), Diploma Civil Engineering (1), Diploma Human Resources Management (1), Diploma Environmental Health (2), MBA (1), MSc Microbiology (1), BSc Honours Rangeland Management (1), MA Total Quality Management (1) and ten (10) BVSc Veterinary Medicine.

Moreover, ten staff members have secured external financial assistance and are pursuing their studies in the following fields: one Advance Diploma in Business Project Management at the University of Cape Town, South Africa, one Diploma in Animal Health at University of Namibia (UNAM), one MSc Horticulture at Cornivus University of Budapest, Hungary, one Post Graduate Diploma in Forest Science at University of Stellenbosch, South Africa one MSc Natural Resources Management at the Namibia University of Science and Technology (NUST), one MSc Crop Science at Kinki University, Japan one Diploma in Animal Health at UNAM, one PhD Plant Breeding and Genetics at the African Center of Crop Improvement, University of Kwazulu Natal, South Africa, one PhD in Animal Nutrition at Kwame Nkurumah University, Accra, Ghana, and two MSc in Applied Field Epidemiology/Laboratory Management (FELTP) at UNAM.

As part of its capacity building efforts, the Ministry, through the Division of Product Development, Training and Quality Assurance (DPDTQA), has awarded 16 new bursaries to staff members to pursue studies towards MSc Forest and Wood Science (1), MSc Horticulture (1), Bachelor in Finance and Accounting (1), BSc in Biotechnology (1), BSc Forestry (3), BA Business Admin (1), Diploma Office Administration (3), BA Logistic and Supply Chain Management (1), and BTech Environmental Health.

The Ministry further continued to provide financial support to its staff members in order to upgrade their professional and technical skills in its quest for better and efficient service delivery. A total of 183 staff members attended 39 courses in a variety of fields at the cost of N$ 2 360 298. The courses attended included, amongst others: Integrated Water Resource Management, Human Resources for African Countries, Plant Variety Protection, Diagnostic Techniques and Recognition of Clinical Cases for Contagious Pleuropneumonia (CBPP), Effective Laboratory Quality Management and Operational Efficiency, Soil, Water Management and Crop Nutrition, Training course ICP-OES Machine Theory, Methodology and Practice, Laboratory Quality and Assessors, Monitoring & Evaluation, Plant Identification, Market-Oriented Agriculture Promotion for Africa (Planning and Management), Conflict Management and Supervisory Skills, Green Economy and Environment Protection and Pelt Sorting.

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 accomplished the following:

- The unit standards and the curricula development based on the unit standards for the Certificates in Crop and Livestock Production have approved by Namibia Qualifications Authority (NQA).
- Four staff members who performed well at certificate level were selected for the diploma course as Training of Trainers (TOT) in CBET whom have successfully completed and subsequently graduated in November 2015.
- As part of the requirements to register training providers, MADI and TAZAC have completed their training on evacuation skills in case of emergencies like fire outbreaks, and fitness certificates are to be issued by the Ministry of Health and Social services.

10. Mashare Agricultural Development Institute (MADI)

The Ministry, through the Subdivision Mashare Agricultural Institute (MADI) trained 53 farmers in blacksmith, poultry and vegetable production, sold 3982 chicks (N$7 per chick) to 75 beneficiaries and thereby generating an income of N$27,874, and produced 30 tonnes of maize ,which were delivered to GRN strategic food reserves, and 7.1 tonne kangara seed. The Subdivision continued with conservation and development Nguni/Sanga stud as part of DARD mandate to avail improved animal breeding material to farming communities.

DEPARTMENT OF WATER AFFAIRS AND FORESTRY

DIRECTORATE OF WATER RESOURCE MANAGEMENT

OBJECTIVES

The objectives of the Directorate are:

- To promote sustainable socio- economic development through effective management, control and use of water resources and securing equitable access of water resources and securing equitable access of water to all sectors of the Namibian population.
- To act as guardian over the water resources of Namibia, administrating 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 utilization of the water resources of the country.
- To execute strategic water resource development planning as well as regulating and controlling of activities in the water sector.

GEOHYDROLOGY

11. Borehole Water Levels and quality

It takes at least three months after a precipitation event (surface runoff and infiltration) for any changes in the status of the water table to manifest itself to such an extent that it can be technically observed. The response to groundwater variation is mainly dependant on the geological characteristics of the aquifer and the precipitation event.

- Long-term, systematic measurements of water levels provide essential data needed to evaluate changes in the resource over time, to develop ground-water models and forecast trends, and to design, implement, and monitor the effectiveness of ground-water management and protection programs.A total of about 680 monitoring boreholes were monitored for ground water level twice in the financial year 2015/16 and the data are 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 region consist of boreholes measured manually with some installed with digital recorders.
- A total of 44 new digital loggers were installed 10 (Otjozondjupa), 20 (Omaruru-Swakop); six (Ugab (Khorixas) and eight (Hardap). A total of 165 boreholes were sampled for water quality analysis by the Geohydrology staff in conjunction with Water Environment staff. Areas that were included in the sampling program werethe Tsumeb smelter area, Osire, Stampriet area, Zambezi region and in the Uranium Province Region (Erongo Region). The testing on water quality samples were done on all the new DWSSC boreholes that were drilled in the financial year (FY) 2015/16.

12. Licensing and compliance checking

Two hundred and seventy-nine (279) licence applications were processed for FY 2015/16 from Khomas, Hardap, Otjozondjupa, Omaheke, Oshikoto, Kunene, Omaheke and Erongo. Compliance visits were also carried out in these regions and twenty-one illegally irrigating farmers became compliant by applying for irrigation licences.

Table 4. License applications processed for Namibian Regions in the financial year 2015/16, MAWF.

Region	Drilling	Irrigation	Lease	Bulkwater/Abstraction	Authorization
Otjozondjupa & Oshikoto	10	71	4	5	3
Kunene			2		
Omaheke	25	9	3	2	6
Hardap	36	35		2	5
Erongo	12	9	1		2
Khomas	22	9	1	2	3
Total	105	133	9	11	21

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

13. Groundwater Support to DWSSC and other Agencies

Support included the awarding of drilling contracts, the supervision and reporting on drilling activities in the regions for DWSSC and OMA's. Activities in these regions for FY 2015/16 (Erongo – 48, Hardap – 52, Kavango East and Kavango West – 75, Kunene – 51, //Karas – 50, Ohangwena – 50, Omaheke – 92, Omusati – 26, Otjozondjupa – 21, Zambezi – 39). Also, the drilling and coordination of the drilling team on the GRN rig was done. Boreholes have been drilled on request from other agencies, such as for MLR, OPM, MHSS, MET, and MME. Boreholes were also rehabilitated in various regions. These works were done in-house as well as through consultants and contractors.

14. Groundwater Investigation and Management in the Cuvelai- Etosha Basin

The investigation of the Ohangwena Aquifer system is still continuing to further determine the groundwater flow, detailed hydro-chemical condition and sustainable yield, especially for the deeper seated fresh water aquifer Ohangwena II (KOH II).

The project contributed to improved monitoring of the groundwater resources and protection from pollution through applying newly developed guidelines in line with the Namibian Water Resources Management Act and planning for the first bulk water supply from KOH II.

The co-operation with the Federal Institute of Geosciences and Natural Resources of Germany (BGR) was given extra budget of Euro 2 million after Namibia/German negotiations, and will be extended until November 2019 to further assist in the investigations and finalization of the project phase.

HYDROLOGY

According to the Namibian Meteorological Service, the overall performance of the rainfall season was below normal for the entire country. However, some areas in the Omusati, Kunene, and //Karas Regions experienced above normal rainfall.
Generally, in some regions, the rainy season was delayed for about a month. The water levels in the perennial rivers received good inflow. The Kavango River in Rundu reached the 8 m mark and the highest recorded water level was 8.27 m. GDACS Global Flood Detection System has detected flooding along the Kavango River. The highest water level recorded for the Zambezi River at Katima Mulilo was 5.64 m and flood waters have gone over the Eastern Zambezi floodplains. Some areas in the Kunene and Omusati region were also flooded. The flooding that affected the Kunene region during the last week of January 2016 was mainly caused by flash floods of three tributaries feeding the Kunene River. The flood caused loss of lives, livestock and damage to property and infrastructure. The flooding in the Omusati region was caused by the breaching of the Caleque-Oshakati NAMWATER Canal in the first week of February 2016. Houses and fields were flooded and loss of lives was reported. .

1. Development of flood management plans

Namibia-UNESCO Water Sector Support Project: Stakeholder consultation with international team of Experts led by UNESCO took place in Windhoek in July 2015 to discuss the improved project document and to agree on the way forward. The Project Document was revised in general and the capacity building component for the two Master courses programmes was agreed-upon. The Report on Capacity Building component was reviewed and finalized by the Namibian stakeholders, mainly comprising of the UNAM, Polytechnic of Namibia (now Namibia University of Science and Technology (NUST)), various Ministries representatives, as well as by the international partners from UNESCO. Two Master programmes curriculums are in the process of finalization with titles as follows: Water and Environmental Engineering Master (NUST) and MSc in Water Resource Management (UNAM). A draft Memorandum of Understanding (MoU) between UNESCO and GRN was compiled and discussed.

A flood and hydrological analysis for the Fish River Catchment in Namibia was completed by Consultants of the Danish Hydrological Institute (DHI). The study objectives were to conduct:
(i) Hydrological analysis of Fish River Catchment including an extreme event analysis of rainfall and the setup of a rainfall-runoff model;

(ii) Hydraulic modelling of a 28 km stretch of the Fish River downstream of Hardap Dam including Maltahohe bridge and the Aub and Dabib tributaries;
(iii) Flood risk assessment for the flood prone areas, downstream of Hardap Dam.

Data was collected and staff capacitated on both the hydraulic (data on structures) & hydrological (data on rainfall, DEM, Hydrographs) models by using the software (Mike 11, Mike 21 and Mike Flood). Results were presented to MAWF Management and the Mariental Flood Task Force (MFTF). Recommendations for both structural and nonstructural interventions were made that of building a dyke and raising the Bi one road and improving storm water drainage in Mariental and improving of flood early warning network downstream of Hardap dam. Flood risk maps were also produced (1:5; 1:20, 1:50 and 1:100) and handed over to MAWF (Hydrology) for further dissemination. Rich data base of GIS layers and in situ rainfall data have been compiled for the Hardap Fish catchment.

2. Upgrading and Expansion of Hydrological monitoring network throughout Namibia:

The Hydrological monitoring network was upgraded, maintained and expanded by acquiring and installation of instruments.

i. Twenty (20) CELLO Telemetry instrumentation was acquired and installed in the Cuvelai. Zednet, a web based software solution to supply water management information, was setup to be able to receive data logged by the Cello instrument. Out of 20 Real Time Cello stations, 18 stations are currently transmitting. However, two are not transmitting because of the bad network coverage.

ii. The second phase of the Automatic Telemetric rain fall stations (ATRS) in the Cuvelai Etosha Basin (CEB) commenced and 11 stations were installed with only eight that are transmitting,three rain gauges units are not transmitting. The total number of ATRS installed in the Cuvelai Etosha Basin for the first and second phase was 20. Out of 20 only 16 are transmitting, four of ATRS units are not transmitting.

iii. The SADC Secretariat Water Division revitalized the Regional Hydrometric Network (HYCOS) with support from GIZ. This was the third phase of the HYCOS project and kicked off with a site readiness assessment verification exercise done by a consultant of Atkins International. The final step was the installation of three Telemetry (SEBA) instruments and a server. SEBA instruments were installed at Ngoma (Chobe), Kongola (Kwando), and Katima Mulilo (Zambezi) of the Zambezi catchment.

Staff members continue to monitor and ensure the operationalization of the HYDSTRA data collection and database systems and undertook several initiatives.

i. The division requested for an Audit of the HYDSTRA database system and the GIS Lab. Currently, the HYDSTRA database is not connected to any other databases in DWAF or to the Ministerial network due to security reasons. The system is running on a separate network with a server and five clients. The Audit recommended an upgrade of the firewalls and proposes wireless internet connection.

ii. The HYDSTRA has a component for dams and the variables/component required to calculate the dam inflow and outflow for the models were discussed with NAMWATER (NW) to validate and update with correct information.

iii. The HYDSTRA software annual license upgrade was done, 54 data requests received and handled and data editing is ongoing;

3. LAW ADMINISTRATION

Permits Issuing

- The utilization of the country's water resources were 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 year in accordance with the water law.

Legislation

- The drafting of the regulations for the Water Resources Management Act 2013 started. Only highly technical draft regulations such as flood and dam safety and groundwater artificial recharge could not be finalised. These were outsourced and will be finalised in the next financial year (2016/17).

4. STRATEGIC WATER PLANNING

The Natural Resources Accounts for Water

- Desk-top study report on the Water Resource Accounting (NRA) was written and submitted to the Director of Water Resource Management (DWRM). The Division continued with water data collection for the completion of a full NRA report, hence 75% of data required for Central Area of Namibia (CAN) was collected with the remaining data already requested and waiting to be acquired from the city of Windhoek. As part of the data collection, a familiarization field trip on water supply network for CAN was organized and carried out in collaboration between Policy and Water Law Administration division and NamWater Planning and Water Resource Management section.
- An excel data spreadsheet for irrigation permits and returns was compiled for major perennial and seasonal rivers (Orange, Okavango, Kunene, Zambezi, Swakop, Khuiseb and Omaruru) and submitted to the director.
- Training on capacity building workshop for Water Resource Accounting was organised and took place in Swakopmund in February 2016.

Environmental Impact Assessments (EIAs)

- The Division of Water Planning assisted the Directorate of Extension and Engineering Services (DEES) to carry out preliminary EIAs for proposed Green Scheme projects for Tandjieskoppe irrigastion project. A report was produced and finalised in February 2016 and distributed to various stakeholders.

5. WATER ENVIRONMENT

Water quality and wetlands resources investigations

- The Division continued with monitoring and management of ecological and environmental aspects of water resources in the country. Wetlands and Water Resources Quality Protection and Monitoring were carried out in the Swakoppoort Dam, Kunene, Kavango, Orange and Zambezi Rivers.
- Wetlands and water resources quality in these wetlands remain generally of good quality. The infestation of Kariba weed (Salvinia Molesta) in eastern Zambezi wetlands remains under control. The analyses of collected water samples continued throughout the year by Namwater. The outsourcing of water analyses to laboratories will continue until the ministerial Water Quality Laboratory is fully upgraded. Important instruments for the Laboratory have been bought and process to operationalize the laboratory ongoing. Inventory for Glassware and expired chemicals was carried out during the period. The Fume Hood for gas extraction from the ICP sample analyzing machine was installed as well as the Argon gas line.
- 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 throughout the year.
- Water demand management data and information has been collected from different local authorities and water service providers, and is yet to be analysed. A study on water demand management indicators at Keetmanshoop was completed by the Division in October 2015. The aim of the study was to establish the performance of the Municipality of WDM when compared to internationally accepted water loss indicators/standards. The results indicate high non-revenue water (NRW) in the region of nearly 38% at Keetmanshoop, and low key implementation of WDM at household level in that Municipality. The NRW loss equates to about N$7 Million of the water expenditure for the year 2013-2014 in that Municipality.
- The Water Quality Information System (WAQIS) System Administrator and End User Training took place in November 2015. The New Point Solution (Pty) Ltd consultant continues to in corporate functionality changes to the system. The system is yet to be handed over to the Division officially.
- Dundee Precious Metals-Tsumeb (DPM-T) formerly known as Namibia Customs Smelter (NCS) and surrounding areas are monitored annually on 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) continued 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 Close Audit Report Inauguration of the commissioning of the Acid Plant is planned for April 2016. The project is entering phase two with some of the activities that were audited as continuous. For MAWF, the Seasonal Water Quality Monitoring Program and the Development National Soil Guidelines/Standards are the activities that will continue into phase two.

6. Protection of Water Resources, Efficient Use and Awareness

- Pollution control surveys and compliance monitoring continued throughout the year in all 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, which makes pollution control and compliance challenging. This dilemma needs to be addressed to prevent pollution.
- 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. Up to date, the number of sanitation and water services providers and operations with valid wastewater and effluent discharge permits remains low in the 14 Regions of Namibia. There are about 311 places on record currently of which 71 (23%) have valid permits, 95 (31%) have expired permits and 145 (46%) never had permits.
- The annual World Water and Wetlands Day Commemorations took place from 22 - 23 March 2016 at the Von Bach Dam Resort, under the theme “Wetlands & Water for Sustainable Livelihoods, Jobs and Development”. The Deputy Minister of Agriculture, Water & Forestry, Honourable Anna Shiweda, delivered the keynote address on this occasion. Integrated Water Resources Management and Planning at basin and national level

  For the 2015/2016 FY, a number of activities and projects were implemented towards sustainable use and management of our water resources and they are highlighted below;
- The Directorate, through its 5 Divisions, provided technical, administrative and financial sup port towards the operationalization of the nineexisting Basin Management Committees (BMCs).
- Two basin offices, the Okavango and Kuiseb Basin,which have been closed for less than a year after the resignation of the then officers were reopened during May and June 2015, respectively. This was after two new staff members assumed duty to provide support to these offices. This brings the staff complement of Basin Management Personnel to seven officers. Tsumeb sub-basin office remains closed since Feb 2015, after a staff member was transferred to the Hydrology Division.
- Commencement of the process for developing the Omaruru Basin Management Plan during Sept/Oct 2015. The plan development has been outsourced via the call for service and the SLR Namibia emerged the successful candidate. This process is expected for completion by July 2016.
- Initiatives have been made to collaborate and/or join forces with the Department of Environmental Affairs form Ministry of Environment and Tourism in the implementation of the Water Resources Management Act No 11 of 2013 and the Environmental Management Act No 7 of 2007. Cuvelai-Etosha Basin is a starting point for such collaborations. The main focus will be solid waste and waste water management as well as sand mining/sand abstraction from burrow pits. One awareness workshop was held on 29 July 2015 at Oshandira Lodge.
- No new basin management committee has been established in the remaining basins however efforts have been started to initiate a basin management committee for the Nossob-Auob Basin which is expected to be established in the next financial year.
- The seven staff members who have initially been under the payroll of either the Water Environment or Hydrology Divisions were successfully transferred to the newly established division, Water Basin Division.

7. 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 this year 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 Council of Ministers met in November 2015 in Maseru. One of the decision taken was to ensure the finalisation of the Revised ORASECOM Agreement with which allows for better organisational structures, from Ministers to Senior Official, Commissioners to Task Teams.
- Second Joint Basin Survey (JBS2): The commission carried out its second basin-wide environmental assessment survey in 2015. The assessment is carried out every five years, collecting samples on different protocols (water, sediment, vegetation, fish, birds, bird-eggs, macro-invertebrates etc). A public event was held on the 7 July in Rosh Pinah where by a demonstration exercise for the macro invertebrates assessment was done at riverside. Reports displaying the obtained results of the collected samples are available (www.orasecom.org).
- Technical inputs were provided to the secretariat through different technical task teams meetings. The Technical Task Team reviewed progress for the IWRM-basin wide SAP implementation report and different activities on the National Action Plans. The Legal Task Team was reviewing the ORASECOM Agreement of 2000.
- USAID/IUCN Supported PROJECTS: The commission was involved in community development project, assisted by USAID and management was carried out by IUCN. These projects have been running for a period of five years and came to an end in May 2016. Namibia was involved in 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 Kelebone and Ha Tlhaku and South Africa in the Support to the Management of the Orange River Mouth. However, these projects activities are part of the countries NAPs implementation under the United Nations Convention to Combat Desertification and Drought.

Permanent Water Commission (PWC)

- The Memorandum of Understanding on the principles of cooperation towards a water sharing agreement based on the principle of reasonable and equitable allocation from shared Lower Orange River still need to be considered by the two countries at the next bi-National meeting.
- A meeting was held on 30 June to 01July 2015 in Pretoria to discuss the modalities of the project's inception activities. Consultants for the Noordoewer/Vioolsdrift Dam (NVD) Feasibility study were appointed in September 2015. Subsequent meetings were held on 19 January 2016 in Pretoria and 24-26 February 2016 in Windhoek respectively.

Okavango River Basin Commission (OKACOM)

- May 6 to 7, 2015 MSIOA Inception Maun, Botswana-The Multi-Sectoral Investment Opportunity Analysis (MSIOA) is a study of the multi-sector investment opportunities in the Cubango-Okavango River Basin, aiming to provide the 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.
- An inception workshop for the MSIOA took place in Maun/Botswana at the OKASEC premises from May 6 to 7, 2015. The project is funded by the Cooperation for International Waters in Africa (CIWA) with technical assistance from the World Bank.
- May 2015, Annual OKACOM Week Luanda, Angola: The Permanent Okavango River Basin Water Commission (OKACOM) had its 21st Annual Meeting in May 2015 in Luanda, Angola.
- The Commission met to review progress at the implementation of its Strategic Action Programme (SAP) which is currently primarily supported by Sweden through the 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.
- Furthermore, building from the specific request from the Honourable Minister of Energy and Water for the Republic of Angola, and in line with the outcomes of the OKACOM Member States Ministers responsible for the Water Side Event in Maseru, Lesotho, 2011, the formal engagement of the ministers through a structured and systematic process has been recognized. In this regard the first OKACOM Water Ministers Forum was established and took place on 29 May 2015 in Luanda, Angola. The OKACOM Water Ministers approved and signed the new structure of the Commission which indicated the Water Ministers Forum as the highest organ of OKACOM.
- Extraordinary Water Ministers meeting, Harare, Zimbabwe - July 2015: The key issues for deliberation were the instruction to the OKACOM Council of Commissioners by the Minister Forum to refine the draft Ministers Forum Rules of Procedure, and to articulate the best approach to be followed in order to secure effective implementation of the OKACOM decision to re-locate the OKACOM Secretariat from Maun to Gaborone.
- MSIOA National Stakeholders Consultation Workshop — September 2015: The first round of National Workshops were conducted on 10 September 2015. The aim was to allow national stakeholders to engage with the World Bank and consultant team, gaining an understanding of what the study seeks to achieve and the approach being adopted and being able to influence these at an early stage.
- OKACOM/Mara Exchange Feb/March 2016: A proposed exchange programme between OKACOM and the Mara River Basin Joint Technical Committee, kicked off with a visit from the Kenya and Tanzania delegations to OKACOM from 2 to 4 March 2016 in Maun, Botswana at the OKASEC Office.
- The one-day indoors discussions of OKACOM experiences with its institutional and organizational capacity development, combined with the OKACOM experiences in developing its programmatic intervention strategy (TDA and SAP), was complemented by the undertaking of the field visits to SAREP driven field demonstration projects on best practices to Natural Resources Management being implemented in Shakawe/Seronga (Botswana), Manyana project in Rundu (Namibia) and the Rural Water Supply Project in Calai (Angola) by the delegations as well as OKACOM Commissioners and OBSC Members. OKACOM will also take advantage of the proposed response exchange visit to East Africa.

Zambezi River Basin Commission (ZAMCOM)

- Newly established NASC, met on 09 September 2015 in Katima Mulilo. The ZAMWIS workshop was held in Windhoek, to demonstrate the GIS water information system that ZAMCOM to intend to link all the riparian for information sharing.

Kunene River Permanent Joint Technical Committee (PJTC)

- The PJTC had several meetings during the year to finalise key issues and manage joint projects such as Kunene Transboundary Water Project (KTWP), Calueque-Oshakati, rehabilitation of the Calueque Dam Canal and Baynes Hydro-Power Project.
- The scope of the KTWP changed scope to concentrate mainly in Angola to set up a distribution network for Angola south villages of Omupanda and Santa Clara; this work is already completed.
- The other part of the work is the Calueque Water Supply System, Canal offtake and Main pipe repair work. These are expected to start next financial year (2016/17). The Feasibility study into the option for improving Calueque Oshakati Canal water efficiency was completed and phase 2 is expected to look into more detailthe rehabilitation of the canal and/or replacing it with the pipeline to avoid excessive water losses and pollution. The Calueque dam rehabilitation is almost complete and the two countries must work on the modalities for joint operation given the importance of the dam to water supply in the north central areas.

Cuvelai Watercourse Commission (CUVECOM)

- The CUVECOM Agreement was signed on 14 September 2014 in WindhoekThe Namibian Commissioners were appointed and the first meeting took place in October 2015 at Calueque Village in Angola. The main objective was to introduce the members from the two countries and establish working modalities. The meeting agreed to set up a temporary office in Oshakati where staff from government institution will be seconded.
- A rapid assessment of the basin water situation is required to provide a look feel in urgent joint water management issues.

Southern Africa Development Community (SADC) - Water Resources Technical Committee (WRTC)

- SADC Water Resources Technical Committee (WRTC) meetings were attended during the course of the year. SADC Water Week was celebrated in Windhoek on between 28 and 29 May 2015, whereby a presentation on Transboundary Cooperation was carried out, highlighting the countries achievement on transboundary agreements. Multi-stakeholders dialogue meeting also took place in Windhoek, where the RSAP 4 was discussed for finalization.

UNESCO IHP (International Hydrological Programme)

- The African Drought Early Warning System Expansion to Southern Africa Expert Group meeting was held at Safari Hotel from 19 to21 May 2015. The joint event was hosted by MAWF and organized by the International Hydrological Program (IHP) of UNESCO. Participants from UNESCO's Global Network on Water and Development Information for Arid Lands (G-WADI), UNESCO Windhoek, Nairobi Office and UNESCO Headquarters as well as national and regional participants also participated and contributed to the workshop. The workshopvidentified capacity building needs, gaps on drought monitoring and early warning, and developed a set of recommendations and a plan of action for drought monitoring in Southern Africa to improve national policies for drought management in the region. Namibia was identified as one of the countries to pilot the Drought Monitoring and Early Warning System including consultation with SADC Climate Services Centre.

NASA

- NASA Godard space center continues to support the NHS with satellite products based on request.

SASSCAL

- The SASSCAL project with focus on Remote Sensing for operational hydrology is ongoing. Challenges with resignation of interns due to permanent employment offers somewhere else and project delayed with one year because of administrative reasons.

8. HUMAN RESOURCES

Staff shortage in some of the divisions within the Directorate of Resources Management remains a major problem especially in scarce skills fields like engineering, chemistry and geo-hydrology. At the same time staff members continued to be trained through shared water commissions and SADC, while others are involved in qualifying courses. The Division Water Environment lost one of its long-serving members after 25 years of service: Mr Alfred Makumbi, Artisan Handyman, who passed away in September 2015.

9. BUDGET

- The total budget allocation for the fiscal year 2015/16 was N$ 72,078,000 and N$ 69,727,000 was spent. Development budget accounted for N$27,950,000 of which roughly N$ 27,706,990.00 was spent; and operational budget allocation was N$ 44,128,000 and N$ 42,192,000 was spent. All together there was under spending of about 3%.

CHALLENGES

- Some projects could not be implemented due to the budget cuts.
- High Staff turnover and shortage of skills in the water sector.

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

ACHIEVEMENTS

1. Coordination Activities
- Four National Water and Sanitation (WATSAN) Forum meetings were held
2. Operational Activities

Maintenance of Water infrastructures

- The maintenance of more than 3,500 existing communal water points were carried out countrywide.

Private Water Connections

During the period under review, 3993 private connections were added to the existing 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 private off takes 21,967 to date.

Human Resources and Staff Training

- During the period under review, a total of 40 staff members, mainly Operator Drivers, were trained in Defensive Driving Skills. This was as a result of new model of trucks received hence the training was aimed at imparting skills and knowledge in handling these trucks in order to ensure durability and reduce accidents.
- Community Development and Training: Community awareness arising on Sanitation health and hygiene education through Participatory Hygiene and Sanitation Transformation (PHAST) and Community Led Total Sanitation approaches ware conducted in 13 regions. A total of eighteen (18) Water Point Committees in Omusati, Ohangwena and Kunene Regions respectively.

Water Supply Subsidy Implementation

- Two consultative workshops with stakeholders were held in Onangwa covering Oshikoto, Ohangwena, Oshana and Omusati Regions and in Rundu covering Kavango East, Kavango West and Zambezi Regions. The workshops were aimed at engaging the regional stakeholders to solicit inputs and deliberate on the implementation of the Water Supply Subsidy Policy, especially on the selection criteria for identification of beneficiaries, as per Cabinet (decision No: 17th/02.10.12/2007), in order to determine who should be subsidized. The inputs from these workshops shall be part of the final document and way forward after the national workshop that will take place in 2016/2017 in Windhoek.

The Capital Budget

The DWSSC 2015/16 appropriated capital budget was N$ 932,587,000 of which N$ 923, 789, 903 was spent. The breakdown against different cost centres was as follows:

- 98.2% of the Community Based Management vote allocation;
- 100% of the Rural Water Supply Coverage vote allocation;
- 99.7% of the Implementation of Decentralisation, Constituency Office Construction vote allocation;
- 99% of Construction of Large Dams vote allocation;
- 100% of the Desalination Bulk Water Supply to the Mines at the Coast vote allocation;
- 92.8% of the Construction of Dams, Traditional Wells and Pans vote allocation;
- and 99.9% of the Rural and Urban Sanitation vote allocation.

The Recurrent Budget

The DWSSC 2015/16 appropriated recurrent budget was N$ 176,791,000 of which N$ 169, 842,962. An overall expenditure for the DWSSC 2015/16 recurrent budget of 98% has been achieved, which is just outside the required 2% under, or over expenditure. The expenditure per vote at the end of the financial year was as follows:

- Vote 001 (Remuneration) 100%;
- Vote 021 (DSA) 87%;
- Vote 022 (Materials and Supplies) 87%;
- Vote 023 (GRN Transport) 100%;
- Vote 024 (Utilities) 99%;
- Vote 025 (Maintenance Expenses) 49%;
- Vote 027 (Other Services and Expenses) 104%;
- Vote 101 (Furniture & Office Supplies) 61%;
- and Vote 103 (Operational (incl. Water Supply) Equipment) 65%.

Development Activities

- Construction of the Katima Mulilo – Ngoma Water Supply Scheme Phase 2 and Water supply pipeline to displaced communities in Kavango East Region has been completed and commissioned during the period under review. Construction of the following Water Supply Schemes are continuing; Katima Mulilo – Kongola Water Supply Project Phase 2, Omuntele pipeline extension and Iitapa – Okeeholongo Water Supply Scheme
- Feasibility studies for the Otjombinde Water Supply Scheme commenced
- 105 Water Points were rehabilitated, 135 Boreholes installed, 80 boreholes rehabilitated and 54 small pipelines constructed as had been identified by all regions.

Figure 12. Newly installed and rehabilitated WPs

- The construction of Tses Rural Water Extension Centre (RWEC) in the //Kharas Region is completed. The feasibility studies for the construction of Nkurenkuru DWSSC Regional Office commenced and is 20% completed.
- The construction of sanitation facilities continues to contribute enormously to the development of sanitation infrastructure in different regions of the country. A total of 2850 sanitation facilities were constructed in 13 regions, during the period under review.

Figure 13.Sanitation Facilities - Ventilated Improved Double Pit (VIDP) Latrine (Movable Structure)

Figure 14. Sanitation Facilities - VIDP Latrine (Immovable Structure)

Figure 15. Sanitation Facilities - VIDP Latrine (Dug pit ready for lining)

Neckartal Dam

- The Roller Compacted Concrete Dam wall was 26% completed during the year under review. The establishment of the quarry is 100% complete and mining is in progress. Erection of plant both at the quarry and dam site is 100% complete. Excavation for the dam wall foundation is 100% complete, and this includes the left bank, right bank and river bed excavations. The clearing and grubbing of the area at the abstraction works is 100% complete. Re – installation of the main Coffer Dam is completed. During the year under review, the trench excavation for pipeline is 95% complete, pipes lying 80% complete and backfilling is 60% complete. The excavation of the pump station is 90% complete.

Figure 16. Neckartal Dam Project: the right bank

Figure 17. Neckartal Dam Project: Wall from the left bank

Figure 18. Neckartal Dam Project: Pipeline - Backfilling

Figure 19. Neckartal Dam Project: Abstraction works

3. Drought Relief

The 2012/13 to 2014/2015 rainfall seasons in Namibia were very poor which resulted in serious drought conditions being experienced in most regions. This had a major impact in some of the NamWater operational areas such as the Cuvelai area. This impacted on both community drinking water and also livestock water supplies. Considerable efforts were made such as re – drilling of boreholes, installation of boreholes and water tanker delivery to ensure that water was available at all times.

In support of the Office of the Prime Minister, drought relief measures budgeted at over N$ 170 million were implemented by DWSSC in the following regions:

Table 5. Re-Drills of the drought relief for 2015/16

Region	Total Drilled	Successful Bhs	Dry Bhs
Erongo	14	6	8
Hardap	22	16	6
Kavango East	20	20	0
Kavango West	21	21	0
Kunene	19	13	6
Ohangwena	20	20	0
Omusati	10	4	6
Otjozondjupa	23	13	10
Oshikoto	10	9	1
Zambezi	14	11	3
//Karas	13	8	5
Omaheke	10	5	5
Total	196	146	50

Figure 20. Drilling of Boreholes:
Adding mud to the drill.

Figure 21. Drilling of Boreholes:
Overview -
Mud Drilling Rig

Figure 22. Drilling of Boreholes:
Water blowing out3.
SPECIAL PROJECTS

Namibian Red Cross

- The four year water supply and sanitation project for Kunene, Ohangwena and Kavango East and West Regions that commenced in 1 May 2011 ended in April 2015. It focused on improved sanitation and hygiene practices in rural communities and schools, rehabilitation of existing or construction of new water points and establishment of Water Point Committees to ensure ownership and sustainability.
- The total value of the project is € 3,850,000 of which the EC contribution is € 2,500,000 with the two International Red Cross partner organisations (Swedish and Flemish Red Cross) pledging the remaining € 1,350,000.
- NRCS received funding for implementation of WATSAN activities through other streams such as the Spanish Livelihoods and Food Security Project in Kavango East Region, UNICEF in Ohangwena Region and through the NRCS Drought Appeal in Kunene Region.

The following were achieved:

Ohangwena Region:

- Triggering of 5 villages using the CLTS approach.
- 21 Trainer of Trainers trained to facilitate the CLTS approach.
- 4789 people trained on CLTS.
- One village certified to have attained an open defecation free status.

Kunene Region

- Four manholes replaced on springs (at Ombombo, Otjikukutu, Okapembapu and Otjahorovara).
- 38 pipes were extended and 20 taps installed.

Kavango East Region

- Two boreholes rehabilitated.
- 234 handwashing facilities constructed.

European Commission (EC)

- The 5 year Namibian Water Supply and Sanitation Sector Programme (NAWASA) is part of the EDF 10 agreement and will be finalised in FY 2016/2017. The NAWASA programme is a Sector Policy Support Programme with an objective to contribute to improved access to potable water and to appropriate means of sanitation for the Namibian population. The operational implementation phase for the NAWASA programme commenced in January 2011 and will end on 10 January 2017.
  The duration of the closure phase is fixed at 24 months thereafter.

- The EC support to NAWASA is provided to the Ministry of Finance as Sector Budget Support up to a total amount of € 36 million which includes a sum of € 1.4 million for technical assistance. Disbursement of funding for the 2015/16 financial year was delayed and a total amount of about € 7,840 million for both Water Supply and Sanitation is yet to be disbursed to the Ministry of Finance.
- The EC support through NAWASA in form of technical assistance continues. Whilst the previous assistance ended in March 2015, a new contract for the same was provided in October 2015 and will end in December, 2016. The assistance provided through DWSSC has contributed largely on coordination of the water and sanitation sector, development of technical guidelines and giving advisory guidance on accelerating implementation of sanitation and hygiene activities. The total value for Technical Assistance to DWSSC totals about € 102,296.

- The EC also supported the Namibian Red Cross programme that ended in April 2015. In addition, EC supported the development of water services in Keetmanshoop Municipality. The budget in support of that project for 2015/16 financial year is € 158,653.

- Through the EC funded Civil Society Foundation of Namibia a WATSAN project was implemented through DRFN in Hardarp Region (Project Title - A pro-poor approach to addressing sanitation and hygiene challenges in Schlip settlement, Hardap region, Namibia). The project aimed to improve the health and wellbeing of the population in Schlip settlement through access to safe and dignified sanitation and improved hygiene practices. A total of 11 Otji Toilets were constructed and 30 community representatives were trained on Health Clubs using the CLTS and PHAST approaches.

USAID

- The Southern Africa Regional Environmental Programme (SAREP) that was operating under the USAID-SADC collaboration agreement and focusing on the Okavango Delta and also looking at biodiversity and flood preparedness in the Zambezi and Kavango East and West regions ended in March, 2015. There is likelihood to have a short programme extension to be implemented in 2016/2017 if funds are made available, the extension is aimed to do a proper project closure including conducting possible programme impact evaluations.

- Coca Cola Africa Foundation through the Replenish Africa Initiative (RAIN) and in collaboration with SAREP implemented a WATSAN project in Kavango East and West Regions. NRCS is the Namibian implementation partner.

- Approximately 13,000 people now have access to improved water supply through implementation of the following activities - water quality analysis in 19 communities, sevenBorehole pump installations, and establishment and training of water points associations and 18 water point committees.

United Nations Children's Fund

- The United Nations Children's Fund (UNICEF) has provided support to the WATSAN Sector in various rural programmes particularly for Water Supply, Sanitation and Health (WASH) related issues such as community health hygiene promotion, school health and hand washing promotion.
- During 2015/16, UNICEF promoted WASH in schools in collaboration with Society for Health (SFH). This was a continuation in supporting the sustainability of the School WASH programme first initiated with MoE and support by MCA-Namibia WASH interventions that ended in 2014. Through SFH, UNICEF worked in 100 schools in Kavango East and West, Ohangwena, Oshikoto, Oshana, Omusati, Oshikoto and Zambezi Regions. A total of 100 School Health Clubs with 2500 learner membership were established and trained on health and hygiene activities.
- UNICEF also supported MoHSS on development of WASH training for Community Health Workers, a total of 562 health workers were trained in Omusati, Kunene, Ohangwena, Kavango East and West and Zambezi Regions.
- During this reporting period UNICEF also promoted piloting of Community Led Total Sanitation (CLTS) in 5 villages of Ohangwena Region. CLTS is an approach that focuses on motivating for a change in hygiene and sanitation behaviour, with an objective to eliminate open defecation. This is in line with the implementation of the National Sanitation Strategy that recommends piloting of the CLTS approach among other hygiene promotion approaches.
- UNICEF continues to collaborate with DWSSC on other activities to include technical assistance on sanitation and hygiene activities and implementation of sector strategies.

Government of Finland

- The Government of Finland continue supporting the water and sanitation sector of Namibia. During this reporting period the Finnish in collaboration with Desert Research Foundation Namibia (DRFN) implemented a project on 'Building Capacity of Local Authorities on Water Governance'. The project was implemented in collaboration with SIWAS and the Anti-Corruption Commission of Namibia. The project had 4 components – piloting of IWRM tool box, Improving accountability, enhancing capacity of Constituency Development Committees and lobbying for effective leadership by MURD. The project ended in January 2016.

5. DWSSC ASSISTANCE TO OTHER INSTITUTIONS

Assistance to the Ministry of Lands and Resettlement

- The provision of water supply services to resettlement farms is the responsibility of the Ministry of Lands and Resettlement (MLR). The Rural Water Development and Planning Division (RWD&P) of the Directorate Water Supply and Sanitation Coordination (DWSSC) continues to assist MLR with the preparation of the design, specification and contract award and supervision the rehabilitation of existing water supply systems and where required to develop new systems.

Assistance to the Namibian/German Special Initiative Programme

- The provision of water supply services under the Namibian/German Special Initiative is supported by DID of DWSSC based upon a memorandum of understanding.
- The programme provides social and development support through local community committees that were disadvantaged during German Colonial times. They are located in 24 constituencies of the 7 regions of Erongo, Hardap, Karas, Khomas, Kunene, Omaheke and Otjozondjupa.

Assistance to the Ministry of Health and Social Services

DWSSC continues to assist the Ministry of Health and Social Services (MoHSS) on all aspects of its national school health programme (particularly the WASH component) which MoHSS is also carrying out in partnership with the MoE. This has included the following activities:

- The Global School Health Survey;
- Development of an Integrated School Health Development Policy and Strategy
- Strengthening the School Health Programme in Namibia. A three year project supported by the Government of Finland.

DIRECTORATE OF FORESTRY

OBJECTIVES

- To establish, manage, utilize and conserve forests, including woodlands, for human and environmental benefit;
- To provide forestry extension services in the form of communication, advisory and training services, and
- To conduct robust scientific research.

ACHIEVEMENTS

1. Development and implementation of Forest policies and legislations.

Development of policies, Strategy and Forest Act regulations

- The National Strategy for De-bushing was drafted, presented, commended and further developed to include comments from various stakeholders. The final draft of the De-bushing National Strategy was produced. The dossier document of Forest Act regulations was finalised for gazettement in the Government Gazette and was gazetted in the Government Gazette on 5 August 2015.

- The directorate started the process of business process re-engineering (BPR) on forest permits, the current processes analyzed (as it is situation) and ideal situation developed with the support of the Office of the Prime Minister. The situation piloted seems to work and reduces time spent on pre-harvesting. The roll – out plan of BPR developed, presented to MAWF management and approved. The roll-out plan required budget which is not available will make it difficult to implement.

Laws and regulations known to actors and effectively enforced

- A total of 583 awareness meetings and workshops were held by regional forestry staff to sensitise communities on the importance and protection of forest resources and the procedures to obtain permits. The regional staff conducted 477 farm inspections, resources monitoring in commercial farms and communal areas, selling points, state forests and community forests for those applied for permits to harvest wood for charcoal, firewood, poles, timber and droppers production.
- Forest resources were regulated through permits management and law-enforcement operations to ensure compliance. A total of 16,603 permits were issued for utilizing forest products, while 87 fines were issued to people illegally in possession of forest products. A total of roadblocks 454 and 600 patrols were conducted.
- About 61,546 tonnes of firewood, 108,995 tonnes of wood to produce charcoal, 202 m3 of timber, 414,200 droppers and 104,100 poles were removed from the forests.

Figure 23. Confiscated charcoal at Omatupa village, Okakara District, Otzjozondjupa Region

Figure 24. Trucks found illegally transporting poles in Ohangwena Region alleged from Kavango West.

While 1,422 tonnes of firewood, 5,731 droppers, 1,225 raftless, 38 tonnes of charcoals, 421 m3 of planks, 2,235 logs and 1, 648 woodcarving pieces were confiscated from people as a result of not having legal supporting documentations. Confiscated materials were auctioned at public actions.

Coordination and communication in place at different levels

- Various regional meetings, committee meetings and about 298 RDCC, CDC and CACOC meetings, OKAKOM, Operations Omake were attended in the region to discuss regional level issues. These meetings aimed at reporting achievements, establishing ways of developing teamwork in the regions and also for planning activities and at these platform is when the Directorate of Forestry are shared.
- The workshop was held in Windhoek to discuss issues related to the regulation of cross border timber trading between Angola, Zambia and Namibia. MoU was developed and forwarded to Attorney General for legal inputs and will be implemented by the three countries to control cross border timber trading. Furthermore a meeting was held with Zambian Department of Forestry on permits issuing and clarification on what is and not allowed to be exported from Zambia to other countries.

The follow – up meeting was held with the Ministry of Finance (Customs and Exercise) to clarify on procedures and conditions of issuing forest permits and the importance of information to include on forest permits as indicated on customs clearance to include on forest permits as indicated on customs clearances such as registration numbers or assessment numbers.

- National Arbor Day was celebrated in all regions across the country. The Tree of the Year was promoted with the theme “Plant trees that promote indigenous knowledge, for healthy teeth, plant blue-bush”. The events were highlighted by tree planting activities that took place at various locations namely at Likwaterera Primary school in Kavango East region; Onawa Senior

Figure 25. A representative from Regional Councillor plant a tree in commemoration of Arbor Day at Likwaterera Primary School

- A Secondary School in Anamulenge Constituency, Omusati region; Nyambali Junior Secondary School in Omuntele Constituency Oshikoto region; Epukiro RC Primary School and Ehafo Combined School in Endola Constituency Ohangwena region all attended.
- The events were attended by community members, school learners, teachers, traditional authority leaders, and staff from DoF and sister Directorates and Regional Councilors. The main event in North West Forestry regions was commemorated at Nyambali Junior Secondary School, a total of 8 schools, two from each region (Omusati, Oshana, Ohangwena and Oshikoto) received their award prizes for achieving 1st and 2nd positions in the Tree Planting Competition. The prizes included floating trophy, wheelbarrows, watering cans and pipes, spades, rakes and seedlings.

Figure 26. Learners of Onawa Senior Secondary School receiving awards and a teacher Mr Conrad planting a tree during Arbor Day commemoration

Figure 27. Seedlings donated and prizes awarded to the school that won school tree planting compeititon during the National Arbor Day celebrations held at Omuntele, Oshikoto Region Community based forest management

- Forest management rights and responsibilities for community forest devolve to communities: The management of community forest by the communities is of importance to the forest management in communal area where forest resources are shared by inhabitant. This is done participatory together with community communities while the DoF staff support the process technically in preparation and implementing milestones as indicated in the community forestry guidelines namely developing constitutions, participatory community forest inventory, integrated management plans and by-laws.
- Gazettement dossiers of community forests were submitted covering about 1,172,116 ha of for ested land that will be under formal management; Ongandjera, Otshiku-tshithilonde, Muyako and N#ajagna community forest.
- Capacity building: Communities from various community forests received training on how to carry out participatory forest inventory and conducted forest inventory in the following proposed community forests, namely Mbeyo, Ehi-rovipuka, Ondjou, Izimwe, Dzoti , Lubuta, Mbeyo, M'kata, Ncumcara and Sikanjabuka community forests; to determine condition of forest resources in term of numbers, regenerations, non-wood products and different tree species.

- The communities were trained also on Participatory rural appraisal and was conducted in Ehirovipuka, African Wild dog and Otjituuo. The community forest management bodies receive training on GPS, bookkeeping (financial management), use of fire processing machines; office administration and skill development, fire management (fire preventive measure, control burning, firefighting).
- Income generating activities: Timber harvesting contracts were signed with contractors in the following community forests namely Cuma, George Mukoya, Muduva Nyangana and Okongo to harvest timber. The block permits were issued to the following community forests such as Kwandu, Zilitene, Muduva Nyangana, George Mukoya, Cuma, Ncumcara, Ncamagoro, Mbeyo, Katope and Okongo to harvest timber to produce beds, chairs, tables and doors; poles, droppers and firewood. Total revenue generated N$1,279,478.

Tree Planting and Orchard Development

- System of seed and seedlings production in place : A total of 798 kg different tree species were collected including mango and marula, producing 211,614 seedlings. Over 72,267 were sold and 15,472 donated to communities, NGOs, government institutions and private individuals, while 7,090 seedlings planted in orchards and woodlots. A total of 498 ha of orchards and woodlots were maintained and silviculture operations carried out, while 13 ha of orchards planted with 7,090 ha. The lower hectares planted is attributed to drought and dry spell the country has experienced.

Figure 28. Constancia Farm Orchard // Karas Region

Figure 29. Tseiblaagte orchard in Keetmanshoop, //Karas Region

Forest Protection and Conservation

- Awareness campaign on fire protection: The foresters are very much concerned about fire as it destroys or devastates the environment which sustain livelihood. Fire suppression training and education remains a high priority on forestry agenda and the regions intensified all efforts create awareness among the populations and a total of 117 days were spent on fire awareness campaigns to educate communities on fire prevention, protection and control, and also to sensitise communities on management of forest/veld fires and encourage them to participate in clearing of fire breaks.
- Various stakeholders were trained on fire management in total 362 individuals and 29 community based fire management units. Furthermore the communities trained were given fire beaters to be used during firefighting; totaling 396.
- Construction and maintenance of fire cutlines/firebreaks: local people were engaged to clear fire break in fire prone areas and about 4,487 km of firebreaks cleared, means 44,870,000 ha protected against fire at a cost of N$ 5,653,950 involving 2,216 people (361 women and 1,855 men).
- Beekeeping: Staff members and 122 community members from Fransfontein and Omaruru (Central) Mbeyo, Munduva Nyangana, Masokotwani, Muyako, Sikanjabuka, Dzoti, Iseke, Bamunu, Silapelo, Salambala, Bukalo, Ngoma, Sibbinda, and Machita (North East) were trained on bee farming. The training focused on the important of bee farming, site selection, bee feeding and capturing, colony capturing and splitting, bee predators. One hundred and seven (147) days were spent on removing and relocating problematic bees. One hundred and twelve swarms (112) captured and relocated to establish new apiaries. There are about eight bee hives in Siya, four departmental apiaries managed by Katima-Mulilo forestry office, and two hives in Rundu forestry office, all with bees. Two staff members from North East Forestry region (NEFR) participated in a Beekeeping Seminar that took place in Malawi.

Wood Industry Promotion

- In the Hardap region, a Community member based at Mariental started with a Furniture Factory by utilizing invasive Prosopis species wood into value-added furniture for high-value product markets locally and internationally. Furthermore, Indian Investors and Aranos area Farmer are busy finalizing a business plan to establishment of Pulpwood and Chipboard Factory also in the region.

Figure 30. Timber processed in Cuma community forest using mobiel sawmill

Figure 31. Instructor demonstrating theoretical part of harvesting techniques processing of planks during training at Okongo Community Forest Centre,Omauni

De-bushing in commercial and communal areas

Various studies were carried out to determine several factors influencing bush-encroachment and how best can be utilised. Below are those studies supported by the GIZ - De-bushing Project:

- Environmental sustainability of future bush control initiatives in both communal and commercial areas; introduction of Environmental Management Plans (EMPs).
- Development of a concept to enable public and private stakeholders to implement labour based de-bushing with the aim to create employment.
- Establishment and testing of methodology to quantify the amount of harvestable biomass in a given area.
- Assessment of the macroeconomic costs of bush encroachment and the net benefit of a national de-bushing programme.
- Identification of methodologies for the removal of mineral content in Namibian biomass in order to reduce the prohibitive maintenance costs for de-bushing machinery.

The programme is currently being implemented in removing unwanted bushes from Government farms and Veterinary Cordon Fence with the aim to increase agricultural land productivity and accessibility to the Ministry's infrastructure and contribute to employment creation opportunities, especially for the youth. A total of 2795 ha cleared, costing N$8,242,000 million in the government owned farms involving 453 people, and while individual farmers in commercial area cleared 2012 ha (47ha crop production, 111ha control of bush encroachment and grass production).

Forest and Botanical Research

- Forest research: Five Field-based research trials maintained as per protocols, drought and frost resistant tree species trails established.
- Botanical research: Toward the revision and publishing of Namibian flora, 456 specimens collected and 2 articles were published. Of the herbarium collection curated, 470 specimens have been incorporated. In terms of rescue missions, 100 bulbs endemic to the highlands along the B1 to Okahandja have been relocated.
- National seed collection maintained: 30 new accessions registered, two maize accessions multiplied and characterised; germination tests on 10 accessions conducted, 23 duplicate accessions dispatched to SPGRC, and 305 plant identifications done.
- IUCN Red List assessed: 3 trans-boundary species assessed to assign Global Red List status.
- Automatic Weather Stations (AWS): 2 new stations erected in Kunene region.

Forest monitoring and mapping

- Burned area reports produced: The satellite images for burned area mapping for 2015 were downloaded and processed. Monthly fire scars were mapped and combined to produce a burned area maps per region during this financial year. Burned reports for June to November and the annual fire report were distributed to regional offices/ Stakeholders and other government offices. A total of 2.7 million ha burned in 2015.

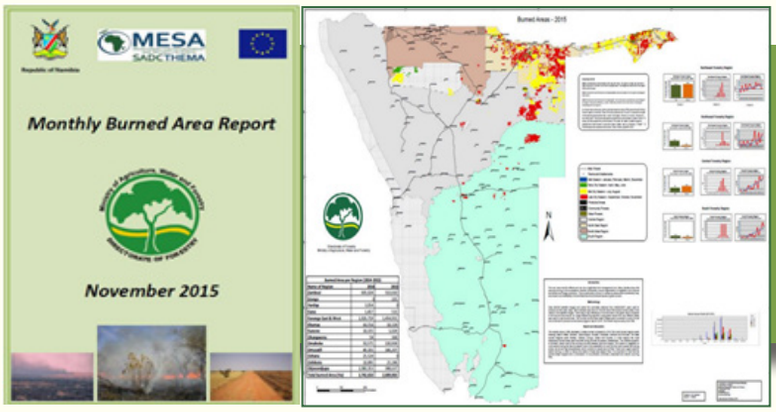


Figure 32. The 2015 poster showing burned areas in Namibia

- State Forest vegetation mapped: Caprivi State Forest vegetation map produced and distributed. Image acquisition, pre-processing and field data collection toward progress of Kanovlei state forest vegetation map was completed.
- Land Cover Land Use monitoring system developed: Sampling zones and sampling density were identified and completed. Scoping was completed and the sampling zones and sampling density were identified.
- Fire Bulletins Produced: Daily fire active data was downloaded and processed to produce fire bulletin reports, which distributed to the respective stakeholders via email on daily basis.
- Fire cutline maps produced: Fire cutline maps for various areas were produced on request in Zambezi, Kavango East and West and Oshikoto.

Figure 33. Namibia map showing sampling zones and sampling densities

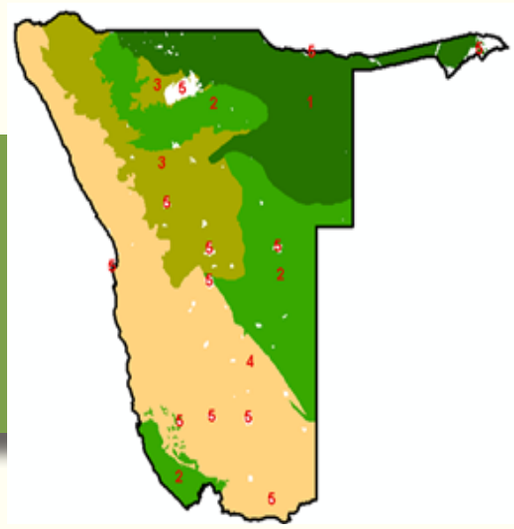
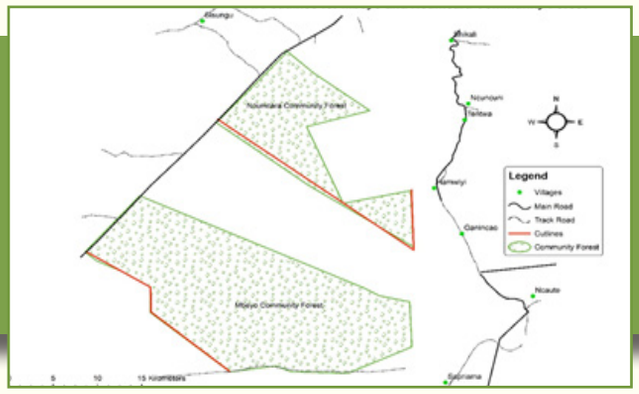


Figure 34. Fire Cutline map for Mbeyo and Ncumcara Community Forests



- Database system management (DMS) and update: Geospatial data management system was maintained and updated on a monthly basis with new acquired data.
- Community Forest boundary mapped: The following community forest boundaries were produced: Omundaungilo, Ehangano, Izimwe, Muyako, Ngoma and Sibula Munda

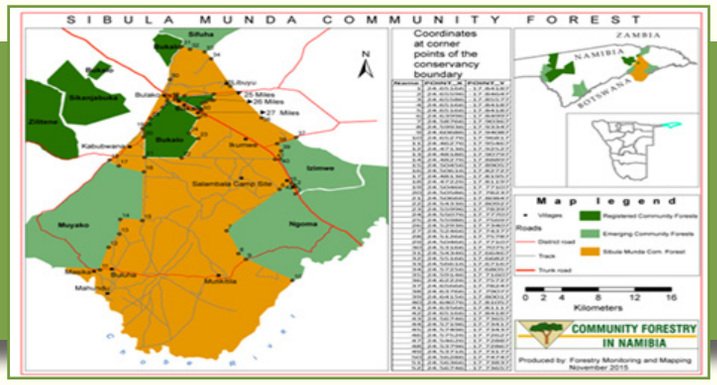


Figure 35. Sibula Munda Community Forest boundary map

- Community Forest zones mapped: Field work for Otjombinde and Epukiro proposed sites was conducted. Final report will be finalized and shared with interested stakeholders.
- Fire cutline priority area mapping: Fire cutline priority area maps for Zambezi and Oshikoto Regions were produced.
- GPS/GIS training to regional staff conducted: 36 staff members from three Forestry Regions (North-East 12, Central 14, and South 10) were trained.

Other activities carried out

The following urgent requests from clients/stakeholders were attended to:

- African Wild Dog map, Epukiro map, Otjombinde map, Ondjou Sample Point map, Ehirovipuka Sample points map, Ondjou map, M'Kata map, Adansonia Digitata Distribution map, GPS coordinates of Farms South of the VCF map, Otshiku-shiIthilonde map, Onkumbula map, and Oshaampula Sample Point map.
- Bee hives map for Zambezi Region, Distribution of Schinziophyton rautanenii in Kavango West map, Namibia-Africa map indicating the flow of certain pests, Ondjou Sample Point map, Ehirovipuka Sample points map, Oshaampula Sample Point map, Okongo Community Forest sample plots map, Malengalenga sample plots, Sikanjabuka Community Forest sample plots, Muyako sample plots, Izimwe sample plots, Lubuta sample plots, and Study area map.

Human Resource Development and Organisational Effectiveness

- Recruitment, promotion, transfers, retirement and losses: Thirty three (33) Forest Technician positions were advertised, shortlisted and interviewed.

Table 6: Recruitment, promotion, transfer, retirements and losses of staff

Staff Member	Recruitment	Promotion	Transfer	Retire	Duty station
Erasmus Ambuga		Senior Forester		````	Nkurenkuru
Theresia Karora	Administrative Officer		Nkurenkuru		
Anna Kamati	Administrative Officer	Rundu			
Menedius Hangula	Forest Ranger		Onayena		
Markus Ndara	Forest Technician		Mpungu		
Matengu NN	Forest Ranger		Sibbinda		
Beukes Melony B	Administrative Officer		Gobabis		
Nocky Kaapehi	Forest Ranger		Otavi		
Hinyangelwa, Lucas	Forest Ranger		Omaruru		
Martin Siseho	Snr Forest Technician		Otjiwarongo		
Calvin Nyambe	Administrative Officer		Ngoma		
Kasuto, B N	Forest Ranger		Outjo		
Kauluma, Paulus	Forest Ranger		Keetmanshoop		
Nakangombe, J	Forest Ranger		Okangwati		
Mukoya, Celestine	Forest Ranger		Nkurenkuru		
Shikongo Onesmus	Forest Ranger		Onankali		
Matias Uushona	Operator Driver		Ongwediva		

Training /Human resource development

- Mr Karupu and Mr Ngheedekwa completed their studies (BSc Degree in Forestry) at Sokoine University in Tanzania.
- Ms Laimi Amukoshi-Mwiikinghi at Sokoine University in Tanzania, BSc. Degree in Forestry.
- Mr Junias Endjala continues with his study, BSc in Forestry at University of Copperbelt, Zambia.
- Ms Selma Elago continues with her study MSc. in Forestry at University of Stellenbosch, South Africa.
- Ms Hileni Heita continues with her study towards B. Hon in Forestry
- Mr Mubita Chaka (Control Forest Technician) continue with his study at Namibia University of Technology for a part-time MSc.
- Various short courses and in-service training were conducted and attended by forestry staff namely beekeeping, fire management, stock control, revenue collection, financial management, forest inventory, GPS, and nursery management techniques
- Effective asset management
- The Directorate purchased vehicles through our partner in development (CFN II and NAFOLA project) 12 vehicles to be used in the implementation of community forestry programme.
  Vehicles monthly km returns and log summaries were completed monthly and submitted in a timely fashion. The Directorate continued to experience problems with dlant and fleet delays to approve requests for services and repairs of vehicles in the region. In addition, low competency and efficiency in some of those garages on tender to repair government vehicles continue to hamper progress.

Revenue collected and banked

Table 7. Showing revenue generated from forest produce

Products	Seedlings	Permits	Others forest products		Sale of Fruits	Total
NWR	155,753.00	42,320.00	59,933.00	65,993.00	323,999.00	
NE	127,684.00	49,700.00	98,250.00		275,634.00	
Central	94,200.00	1,292,882.00	300,856.00		1,687,938.00	
South	82,398.00	482,226.00	26,851.00		591,475.00	
4	60,035.00	1,867,128.00	485,890.00	65,993.00	2,879,046.00	

INFRASTRUCTURE DEVELOPMENT

Below are some of the new offices and staff houses constructed during the FY as per new structure of the Directorate to bring services close to the people. The construction of offices at various stages of completion namely Ben-hur (90%), Aminius (100%), Epukiro (90%), Khorixas (80%), Okangwati (70%), Otjituuo (70%), Mpungu (90%), Mukwe (80%) and extension of Onankali office (70%). While staff accommodation also at different stages of completion namely Hamoye (60%), Ndiyona (100%), Mpungu (100%), Epukiro (60%), Ben-hur (100%), Aminius (90%), Otjituuo (100%), Khorixas (100%), Okangwati (70%) and Karasburg (70%).

Figure 36. Mpungu Forestry Office

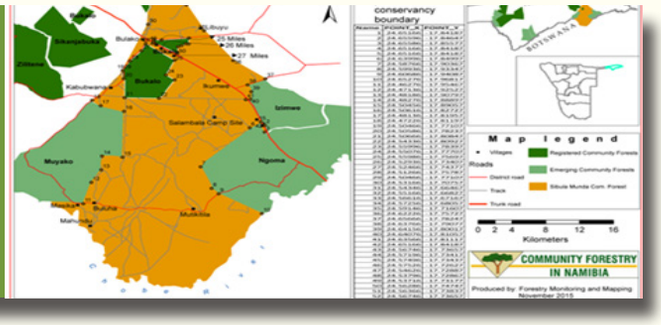


Figure 37. Two bechalor staff houses at Mpungu backside view

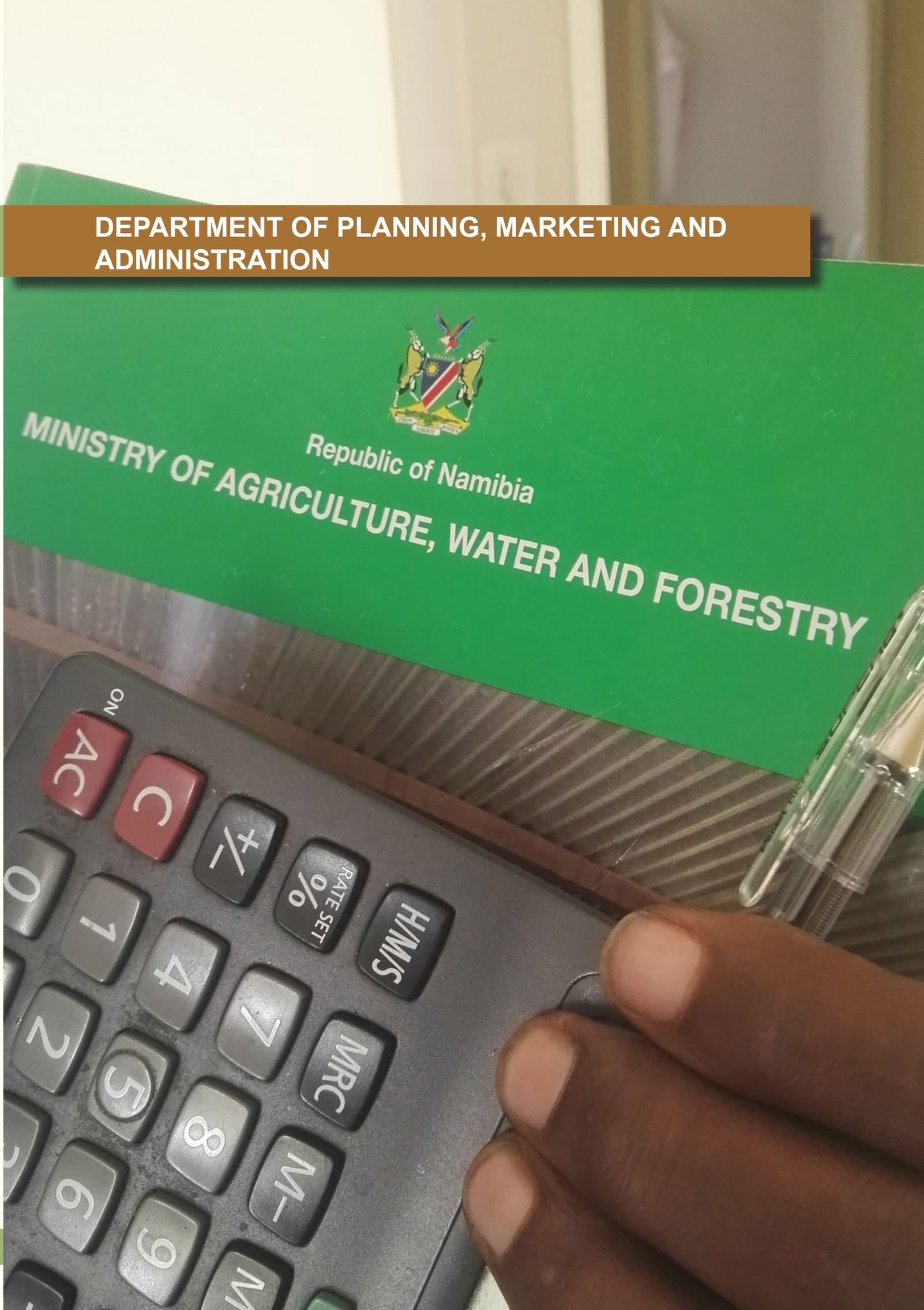
Figure 38. Aminius Forestry Office

Figure 39. Okatyali house and office far south

CHALLENGES

- Plant and fleet delays to approve requests for services and repairs of vehicles in the region. In addition, low competency in those garages on the approved tender to repair government vehicles in a timely fashion.
- Delays of payment of water and electricity bills caused high death rate of trees in the orchards and seedlings in nurseries.
- Delaying in the appointment of sub-receive receivers at sub-stations.
- Expired trucks licence discs hampers the use of those trucks for soil collection for nurseries resulting in low seedlings production.
- During patrol operation at Okongo, it was observed that fence fields and fences are increasing at a high level and this contributes to a lot of trees being harvested in the region.
- Illegal forestry operations in the regions continue to be a challenge.
- Escalations of charcoal production in the Bukalo communal area whereby the local people are collaborating with the Zambians to produce charcoal, putting the Mopane stand (woodland) at risk.
- The process to gazette the community forests is too long and we may not realize the outputs within the given time. Jumble of milestones to the gazettement period.
- Ill-health condition of the workers causes set-back on work productivity, and most offices suffered the consequence of staffs transferred back to regions of origin especially those who are additional to the structure.
- Lack of ministerial ID cards to identified staffs when conducting law enforcement operations. The Regional DoF staff requires identification cards to carry out law enforcement and to be at par with other line ministerial personnel.
- Lack of communication facilities at Okakarara offices due to the non-availability of a telephone, fax and the internet hampered the administration management.
- Delays in the payment of Casual labourers.
- Inadequate and inexperienced technical staff hampered the implementation of activities at various offices.

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 favorable 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

- 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 (MAWF) as well as coordinate sectoral planning. To that effect, the Directorate has finalised the review of the 1995 National Agricultural Policy and the revised Namibia Agriculture Policy was approved by Cabinet and launched in December 2015.
- The Directorate compiled and submitted the 2015/16 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. In addition to this reporting, the Directorate Monitored and Evaluated the Rain-fed Crop Production Program in all crop growing regions and 9 other Ministerial Capital Projects. The purpose of internal Ministerial M&E is to verify progress against information provided for in the Budget Execution Plan report and NDP4 bi-annual report.
- The Directorate also coordinated and compiled the Technical Paper and the Budget Motivation which was discussed in Parliament on31 March 2016. This statement outlined 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 2016/17-2018/19 financial years to the National Planning Commission.
  The Development Budget contains information on planned activities for the Medium Term Expenditure Framework (MTEF) as well as their budgeted amount and reporting on the past achievements.
- The Directorate continued to coordinate the planning for the agriculture, water and forestry sub-sectors. The Fourth National Development Plan (NDP4) calls for the execution of all projects and programmes that have high potential to contribute to the sector's desired out comes and subsequently to the overall NDP4 goals. In an effort to facilitate the planning and reporting of the Agriculture and Forestry as well as Water and Sanitation sectors, the Directorate coordinated a four days stakeholder's consultation workshop in Walvis Bay.

The purpose was to formulate the Agriculture & Forestry and Water & Sanitation, Annual Sectoral Execution Plans (ASEP) for 2016/17 as well as reporting on the second Bi-annual for the 2015/16 ASEPs for the abovementioned sectors. The ASEPs plan and report were submitted to the National Planning Commission as per NDP4 reporting guideline and subsequently to Cabinet for discussion. The Directorate also coordinated and compiled the first and second Bi-annual report of the 2015/16 ASEP for the Agriculture and Forestry as well as Water and Sanitation sectors.

- The Ministry finalised the Namibia Food Safety Policy, which will ensure food safety for all consumers in the Republic of Namibia, and provide sufficient food safety guarantees on all food products traded nationally, or exported to other countries.
- The Directorate with its cooperating partners in the food security monitoring assessments, continued with its objective of providing information and advice to decision makers on issues related to 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.
  The main crop assessment was done in May/June 2015. The assessment noted that crop estimates for the year under review indicated extremely poor crop harvest in all the dry land crop producing regions (both commercial and communal sectors) which is below average and lower than the last season's harvest. This poor and below average crop productions came as a result of the severe drought experienced during the course of the rainfall season. The assessment results further revealed that, household food security continued to weaken as the main crop harvest failed to provide the much needed improvement to the deteriorated household food security. According to farmers the harvest only provided a short-lived relief to households and this improvement lasted at most until end of August last year.
- The Agricultural Inputs and Household Food Security Monitoring Assessment was carried out in November 2015 to determine the availability of agricultural inputs at household and regional levels and to find out the preparedness of farmers for the 2015/16 cropping season. As part of the food security monitoring, the assessment also looked at the household food access. The result of this assessment indicated that, basis inputs and services were in place and reasonably adequate to kick start the season, despite a considerable delay in the onset of the rainfall season. The report further noted that household food security situation continues to weaken as many households are reported to have depleted their last season's poor harvest and are now dependent on the market and the Government Drought Relief Food Programme for food access
- The Crop Prospects and Household Food Security Assessment was conducted in February/March 2016. This assessment was aimed at providing an overview and provisional estimates of production and planted area. The results of this assessment indicated that drought conditions continued to affect Namibia as most parts of the country noted another poor and below normal rainfall performance for the 2015/2016 rainfall season. The report indicated that provisional crop estimates showed a slight improvement of last season's harvest but is still below the average production. The report further revealed that household food security continued to weaken in various parts of the regions as most households are reported to have depleted their last season's harvest and

now dependent on the market and the government Drought Relief Food Programme for food access. It was reported that the supply of drought relief food is inadequate when compared to the number of people that are food insecure.
Households noted that, the drought relief food distribution takes too long to come to their rescue and is only targeting certain households that are regarded as most vulnerable.

- The subdivision has also contributed to the participated in the finalization of the Agricultural census communal sector report for the 2013/2014 agricultural season and this report was disseminated in October 2015.
- 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, fertilizers and ploughing services, 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 many people within the Namibian economy, especially the rural people cannot be over-emphasized. Co-operative businesses, wherever they exist have managed to bring marketing and supply services closer to their members as well as non-members in various communities. They are also the catalysts for the provision of access to savings and credit facilities to their members, farming input and implements in many rural communities, as well as employment and income generating opportunities to many households.

During the period under review, Eight (8) new co-operatives were provisionally registered. These are:

- #Goas Co-operative Ltd.
- Tanigu Farmers ‘Co-operative Ltd.
- Zambezi Farmers’ Co-operative Ltd.
- !Khob-!Nâub Farmers ‘Co-operative Ltd.
- Huidare Farmers Co-operative Ltd.
- Sida Di-A Farmers’ Co-operative Ltd.
- Namibia Patria Farmers’ Farmers’ Co-operative Ltd.
- Oshana Farmers’ Co-operative Ltd.

Also, the business plans of the following eight (8) Co-operatives were received for review by the DCDR. The finalization of these plans would enable the Co-operatives to apply for full registration:

- Nderura Farmers' Co-operative Ltd.
- Ohangwena Livestock Marketing Co-operative Ltd.
- Aminuis Farmers' Association Co-operative Ltd.
- Ozongondjero Omahi Mahi Genetic Improvement Co-operative Ltd.
- NANTU- Likwafela Co-operative Ltd.
- Uukumwe Regional Farmers' Co-operative Ltd.
- Zakumuka Producers' Co-operative ltd.
- Kavango Livestock Marketing Co-operative Ltd.
- The Co-operative College, which is a set of courses offered by the DCDR, is 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, Foundation Bookkeeping and Business Plan training for co-operatives in the Otjozondjupa, Kunene, Erongo, North Central, Kavango, Zambezi and Omaheke Regions. A total of two hundred (200) 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. These 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 Khomas, Erongo, Kunene, Otjozondjupa, Omaheke and North Central Regions, and a total number of twenty four (24) Co-operatives were assisted.
- The DCDR facilitates two loan guarantee funds. These are administered by Agribank and Bank Windhoek for agricultural and non-agricultural co-operatives respectively. The purpose of the loan guarantee funds 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, one (1) co-operative 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 Agribank to small scale farmers at the Green Schemes.

DIRECTORATE OF GENERAL SERVICES

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 specific objectives are to:

Ensure effective Ministerial Financial Management.
Ensure efficient Internal Audit Services.
Ensure efficient provision of Auxiliary Services.
Administer Human Resources efficiently and effectively.
Ensure efficient Ministerial Information Communication Technology Services.
Efficiently mainstream of Gender, Employee Wellness and HIV & AIDS.

MAJOR ACHIEVEMENTS

1. FINANCE

- EFT (Electronic Funds Transfer) of Daily Subsistence and Travelling Allowance (DSA), Accounts Payable and Payroll payments facilitated.
- Ministerial Accountability and Audit reports submitted.
- Efficiently facilitated the Ministerial budget cycle.
- The overall Ministry's budget expenditure rates are 99% for the operational budget and 99.5% for the capital budget for the 2015/16 financial year.
- Division of finance staff were trained on reconciliation of suspense accounts which includes Rejection Accounts, DSA, Accounts Payable, Revenue and Trade Account.
- Cost Centre Managers in the various Directorates were trained on populating of the MoF forms and the D12 accounts.
- Internal AuditsFinancial Audits has been conducted at Hardap region which was the only outstanding region from the previous cycle.
- Administration Audits on transport, receipt and issue of fuel in the Directorates that operate trucks were conducted.
- MAWF as a whole has 80% Compliance with policies.
- Follow-up on Audit recommendations for Tsumkwe, Grootfontein, Omatjene and Outjo were done
- Investigated program was implemented.
- Database for investigations were created.

2. Public Relations (PR)

The Public Relations Sub-division co-ordinate all activities and events for the Ministry, compiled MAWF quarterly newsletter, Customer Service Charter as well as compiling the annual report for the whole Ministry.

3. Human Resources (HR)

- Continue to administrate the conditions of service which include; remuneration system, leaves, retirement and GIPF claims of deceased staff members.
- Filled budgeted vacant posts.
- Facilitated the implementation of Performance Management System for staff members at all levels.
- Facilitated the implementation of the 3 year Ministerial Affirmative Action plan in compliance with the Affirmative Action Act and submitted the Anti-Corruption Commission (ACC) report. Affirmative Action Sensitization staff meetings were conducted in the Khomas and Omaheke regions which were the last two regions to cover on the plan.

4. Auxiliary Services

- Utility services were rendered to Ministerial outlets in all 14 regions.
- Security services were provided at MAWF outlets country wide.
- Facilitated tenders approvals were facilitated through Tender Board to procure goods and services for the Ministry.
- Quarterly Ministerial News Letters, Annual Reports published.
- Response to media on Ministerial related issues as well as press releases.
- Trained a Ministerial auction team on Auditing.
- Livestock stock taking was conducted at all 13 research stations that keep livestock as well as stock taking at all ministerial outlets in the 14 regions.

5. Information Communication Technology

- Regional offices were provided with computer network infrastructure to enable access to Ministerial internet and intranet system.
- New computer software licenses acquired.

6. Employee wellness and HIV/AIDS Programme

- Information, Education & Communication (IEC) materials and condoms distributed to regional offices quarterly.
- Conduct quarterly awareness creation sessions on HIV/AIDS and wellness issues (Cancer, Blood pressure, Cholesterol and Diabetics as well as Facilitation of complete health diagnostic with computer at work).

- The World Aids Day Commemorated, 01 December 2015.
- Technical and financial assistance for program implementation received from GIZ especially on the sector response.
- Documentary developed on Lessons Learned from Employee wellness and HIV and Aids Sector response program for the Agriculture, Water and Forestry Sectors.

7. 2.2.2 CHALLENGES EXPERIENCED IN 2015/2016

Finance

- Delay in acquisition of supplier codes for EFT payments to suppliers for goods and services delivered.
- Budgetary constraints to cater for the Food and Mouth Decease outbreak, drought and the construction of the Neckartal Dam.

Internal Audit

- Delays in completion of legal cases.
- In active Ministerial Audit Committee.
- Slow management buy-in for enterprise Risk management Implementation.

Human Resources

- Difficulty to recruit staff members/persons to fill posts in the scarce job categories and OPM delays.
- Challenge on the implementation of Performance Agreements at all levels.

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.

Information Communication Technology (ICT)

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

8. CAPITAL PROJECTS

RENOVATION OF MAWF BUILDINGS

- Ministerial staff houses were renovated (1–Hardap Region; 3 – Otjozondjupa Region; 3 - Zambezi Region; 1 – //Kharas Region).
- Renovation of Office Block at Khowareb in the Kunene Region as well as drain relocation at Maltahohe office.

CONSTRUCTION OF REGIONAL HEAD QUARTERS

- Regional Head Quarters in the Omusati Region, Outapi has been completed and inaugurated.
- Construction of Regional Head Quarters in Ohangwena Region, Eenhana is 70% complete.
- Construction of Regional Head Quarters in Zambezi Region, Katima Mulilo is 95% complete.
- Construction of Regional Head Quarters in Kavango East Region, Rundu is completed and inaugurated.

CONSTRUCTION OF ADDITIONAL NEW OFFICE COMPLEX AND WAREHOUSES

- Khomas Regional Office (Government Office Park East Wing) tender awarded and earth works started and the project is 20% complete.

EXPANSION OF INTRANET AND IMPLEMENTATION OF E-GOVERNANCE FOR MAWF

- During the 2015/2016 financial year, MAWF managed to do structure cabling at remote offices in 4 regions under the project: Expansion of MAWF Intranet and the implementation of E-Governance project. These offices are connected to MAWF intranet information system aiming at improving staff member's performance by giving access to information timely besides providing internet access for research purposes.

CHALLENGES

- Lack of funds for the construction of additional new office complex and warehouses
- This project (construction of additional new office complets and warehouses) was put on hold due to the moratorium issued by the Ministry of Finance on building of new office complexes.
- Lack of funds to implement the E-governance at all MAWF buildings.

NOTES

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