



THE REPUBLIC OF UGANDA
MINISTRY OF AGRICULTURE, ANIMAL INDUSTRY AND
FISHERIES
(MAAIF)

JOINT AGRICULTURAL SECTOR
ANNUAL REVIEW REPORT FOR
FINANCIAL YEAR 2014/15

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ACRONYMS

ADB	African Development Bank
AFAAS	African Form for Agricultural Advisory Services
ASWG	Agriculture Sector working Group
AU	African Union
BBW	Banana Bacterial wilt
CAADP	Comprehensive Africa Agriculture Development Programme
CBPP	Contagious Bovine Pleura Pneumonia
CBSD	Cassava Brown Streak Disease
CDO	Cotton Development Organization
COCTU	Coordinating Office for the Control of Trypanosomiasis in Uganda
CSO	Civil Society Organization
CWD	Coffee Wilt Disease
DDA	Dairy Development Authority
DFID	Department for International Development
DSIP	Development Strategy and Investment Plan
FAO	Food and Agriculture Organization
FIP	Framework Implementation Plan
FY	Financial Year
GDP	Gross Domestic Product
GoU	Government of Uganda
Ha	Hectare
ICT	Information Communication and Technology
IDB	International Development Bank
IFAD	Internet
IPC	Integrated Food Security Phase Classification
JASAR	Joint Agricultural Sector Annual Review
JICA	Japan International Cooperative
Kg	Kilogram
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
MLN	Maize Leaf Necrosis
MoFPED	Ministry of Finance Planning and Economic Development
MT	Metric Tonnes
NAADS	National Agricultural Advisory Services
NaCRRI	National Crop Resource Research Institute
NAGRC&DB	National Agricultural Genetic Resource Centre and Data Bank
NARO	National Agricultural Advisory Services
NaSARRI	National Semi-Arid Resources Research Institute
NDP	National Development Plan
NTR	Non Tax Revenue
OWC	Operation wealth Creation
TPM	Top Policy Management
UBOS	Uganda Bureau of Statistics
UCDA	Uganda Coffee Development Authority
UDHS	Uganda Demographic Health Survey
UGX	Uganda Shillings
UNBS	Uganda National Bureau of Standards

UNHS	Uganda National Household Survey
UNICEF	United Nations International Children Education Fund
USAID	United states Agency for International Development
USD	United States Dollars
VF	Vote Function
WB	World Bank
WHO	World Health Organization
ZARDI	Zonal Agricultural Research and Development Institute

Executive Summary

The Agriculture Sector Development Strategy and Investment Plan (DSIP 2010/11-2014/15) which is the agriculture Chapter in the National Development Plan (NDP) for the same period, guided the implementation of activities in line with the sector prioritized investments in the Financial Year (FY) 2014/15.

Overall Sector Performance

During the FY 2014/15 the agriculture sector's approved budget was UGX 473.835 excluding taxes, arrears and Non-Tax Revenues (NTR). By the end of June 2015, UGX 409.653 or 91% had been released of which UGX 392.005 or 95.7% was spent on activities by various institutions and reflected consistent performance when compared to FY 2013/14 figures of UGX 396 or 96.9%. It was also strong demonstration of increasing capacity of MAAIF and its Agencies to absorb resources for activity implementation. In specific instances, excess releases against approved budgets were created by supplementary releases for the following vote functions:-

1. The Crop Vote Function received supplementary funding for the purchase of land for creation of an oil palm nucleus estate in Buvuma District in accordance with the Memorandum of Understanding (MoU) between GoU, IFAD and BIDCO under the VODP 2 Project;
2. The Animal Vote Function received supplementary funding to cater for settling outstanding obligations and acquisition of civil works certificates for construction of livestock and fisheries market and water infrastructure;
3. NAGRC & DB obtained supplementary funding to meet the funding gap in its wayer bill and also cater for animal restocking activities.

The continued recovery in agricultural sector growth from 1.5% in 2013/14 to 2.3% in 2014/15 mainly driven by cash crop production and attributed to a significant bumper harvest in the first half of the year is identified as one of three factors that contributed to national economic growth which was estimated to have increased from 4.5% in FY 2013/14 to 5.3% in FY2014/15.

Assessment of the agriculture sector contribution to the two development outcomes of increased household income, livelihoods and improved food security and nutrition was greatly hampered by lack of updated data as that which was available for specific parameters particularly poverty, income, nutrition status and employment was for the years 2009 to 2013 which were outside the review year. This is because the sources like the UNHS and the UDHS are conducted bi-annually.

Agriculture sector contribution to improved food security and nutrition indicated that food availability is generally not a limiting factor in most regions of Uganda but it is food access and utilization which are the major limiting factors (IPC, 2015). Previous IPC reports indicated that in any one year, over 80% of the population is food secure. Low food access and utilization were attributed to poverty, storage, inadequate nutritional awareness, cultural food preferences, poor sanitation, food preparation practices and food wastage, but varied according to regions. It is however important to note that given the contribution of several sectors and institutions to improvements in household incomes and food security, it is difficult to tease out the specific contribution to these improvements by the agriculture sector. It is,

however, reasonable to conclude that the many reforms in the sector over the period of the 2000s and the DSIP period contributed to improvements in food security outcomes.

An assessment of performance of the sector to DSIP strategic outcomes indicated that for outcome 1- *improvement in agricultural output and productivity*, the agriculture sector was estimated to have grown by 2.3% in FY 2014/15 from 1.5% in FY 2013/14 as earlier mentioned. Furthermore, the sector recovery was due to favorable weather conditions and recovery in the cash crops subsector. Data also indicates that production of major food crops increased. The area planted increased from 5.1 million ha to 5.8 million ha, which averages to an annual increase of 2.0%. This implies that increase in food production was mainly a result of area expansion rather than productivity improvements.

As for outcome 2 focusing on growth in agricultural trade and value addition, the share of monetary agriculture increased from 69% in 2013/14 to 75% in 2014/15. In terms of value of formal exports as an indicator of growth in agricultural trade, there was a slight decline of the share from 53.0% in 2013 to 52.7% in 2014. The average share of the value of formal agricultural exports to total exports value was 53% between 2009 and 2014, implying that the share has generally remained the same during this period. For specific strategic commodities, formal exports generally increased between 2013 and 2014, both in terms of quantities exported and value. Apart from maize, beans, hides and skins, vegetables and fruits, the rest of the commodity exports declined in value or volume or both between 2013 and 2014. Cotton and rice recorded the highest declines in volume and value of exports. In the medium term (2009 to 2014), cotton, fish and fish products and fruits recorded lower volumes exported. However, on the average (for the period 2010 to 2014) for almost all the commodities the exported quantities were higher than the baseline (2009), except for fish, beans and fruits. Value addition for agricultural exports is still low but increasing.

For the outcome 3 focusing on *enabling environment and institutional strengthening*, the assessment reveals that with regard to the enabling environment, considerable progress has been made in putting the necessary policies and legislation in place. However, the majority are still in draft form and at various stages at the technical, Top Policy Management (TPM) or Cabinet levels. The review process has been generally slow because some of these policies and bills have spent several years in draft form.

For institutional strengthening, MAAIF conducted a comprehensive sector capacity needs assessment and implemented a modest capacity building programme covering all priority sector needs for MAAIF and LGs Production departments. In addition, Six new departments (Crop Inspection and Certification; Entomology; Fisheries Resources and Management; Fisheries Regulation; Aquaculture and Agribusiness) and one division (Statistics) were established. The Ministry also carried out recruitment for 45 priority positions that were identified in the MAAIF 2014 restructuring report. In total, almost 200 personnel positions have been filled over the last five years. NARO has sponsored staff for long and short term training and in this regard thirty eight scientists have been supported for long-term training of which 32 are pursuing PhDs while 6 are pursuing Masters Degrees.

In 2014, government put in place a single spine agricultural extension system policy and MAAIF has already started its implementation. This has involved restructuring NAADS by removing the presence of the existing public parallel systems in local governments, i.e. the 'traditional' extension workers and the NAADS extension staff. In the same period, Ministry and its agencies continued to pursue implementation of the commodity approach and prioritized 15 commodities that were promoted in a phased manner in relevant agro-ecological zones. Implementation was guided by 13 commodity specific Framework Implementation Plans (FIPs).

1.0 Introduction

1.1 Background

The Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) has been organizing Joint Agricultural Sector Annual Reviews (JASARs) since 2011. The Joint Sector Reviews are a mutual accountability tool recommended by the Africa Union (AU) in the implementation of the Comprehensive Africa Agriculture Development Programme (CAADP). They provide opportunity and a forum for joint assessment by all stakeholders of sector performance and joint agreement on priority interventions to improve performance. It is in this regard that the National Development Plan 1 (NDP1) 2010/11-2014/15 required that sectors conduct annual sector reviews based on their annual performance reports.

The Ministry, in collaboration with the Agricultural Sector Development Partners organized the fifth Joint Agricultural Sector Annual Review for FY 2014/2015 that took place from 14th-15th September 2015 at the Speke Resort Hotel Munyonyo, in Kampala. The review workshop brought together over 300 participants who included leaders and representatives from Parliament, relevant Ministries and Agencies of Government, Development Partners, Farmers' Organizations, Local Governments (LGs), Civil Society, Private Sector and staff of the MAAIF and its Agencies. The theme for the JASAR 2015 was "***Towards Agricultural Commercialization for Wealth Creation***".

1.2 JASAR Objectives

The objectives of the fifth JASAR were to:

- a) Create a platform for stakeholders in the agriculture sector to discuss and review the performance of the agriculture sector;
- b) Identify the achievements and challenges of the Agricultural sector FY 2014/15;
- c) Assess the status and results of implementation of the JASAR 2014 recommendations;
- d) Provide recommendations for increased effectiveness and efficiency in sector performance.

1.3 Review Process Preparations

Prior to the review workshop, MAAIF and Agencies undertook preparatory activities including;

- a) Conducting an assessment of the sector performance in 2014/2015;
- b) Holding a pre-JASAR workshop; and
- c) Preparation of documentation to facilitate discussions during the JASAR.

1.4 Proceedings

Day One

1.4.1 Official Opening: Session One

The chair of the opening session, Honorable Vincent Sempijja, Minister of State for Agriculture welcomed the Honorable Minister of Agriculture (Hon. Tress Buchanayandi), the Operation Wealth Creation (OWC) Coordinator (General Salim Saleh), the Chairman of the Committee of Parliament on Agriculture (Hon. Marthias Kasamba), the Permanent Secretary (Mr. Vincent Rubarema), and the Deputy Inspector General of Police (Mr. Andrew Felix Kawesi). After recognition of the presence of all the participants at the workshop the Chair stated that the participants expected at the workshop included MPs, Development Partners, Permanent Secretaries, Senior Officers of MAAIF, Heads of Sectors from other ministries, the Agriculture Police, RDCs, District Chairpersons, CAOs, District Production Coordinators, CSOs, Farmers Representatives and the Academia.

The chair observed that the workshop was intended to review the performance of the agriculture sector during the FY 2014/2015 and to identify key actions for consideration in the FY 2016/2017 and improving performance during FY 2015/16. He welcomed all the participants to the meeting, and thanked everybody for their respective contributions to the sector. He reiterated the fact that the sector feeds not only the country but also the region and other countries too, and there was need therefore to set up the sector in a strategic style to feed the country and the neighbors. He further said that the sector was one that everybody expected to be a source of income to the majority of the Ugandans, hence the need to meet this expectation. He also said that the sector was expected to increase the Country's exports and improve the balance of payments.

He concluded by noting that the sector had progressed considerably and the various speakers would tell the workshop what had happened. The Chair also recognised and appreciated the support extended to the sector by H.E. the President of Uganda, the Parliament, Operation Wealth Creation (OWC), Senior Government Officers, and all other stakeholders including the farmers who are at the front line.

1.4.2 Welcome Remarks and Workshop objectives

The Permanent Secretary MAAIF, Mr. Vincent Rubarema welcomed all the participants to JASAR 2014/2015, observing that this was the 5th year that MAAIF had consistently held an annual Joint Sector Review. He informed the meeting that JASAR created a platform for the stakeholders to discuss and review performance and assess policies and programmes in the sector, which was directly linked to the MDG goal number 1. He further noted that the review workshop was to enable the stakeholders to assess progress on the sector priorities, review public sector financing and also review progress on the agreed actions from the the 2014 JASAR and to guide on the sector priorities for 2016/17.

He reported that the JASAR was prepared through a consultative process, involving the Top Policy Management (TPM), Ministry of Finance, Planning and Economic Development (MoFPED), Office of the Prime Minister (OPM), MAAIF and its agencies. He noted that the platform would offer an opportunity for the stakeholders to learn from experience and to

work together. He said the expected outputs of the workshop included agreed undertakings and recommended actions.

In conclusion, he said about 300 participants were expected to the two day review workshop. On behalf of MAAIF welcomed all the participants and wished them fruitful deliberations.

1.4.3 Opening Remarks and Launch of the Agriculture Police Unit

The Minister of Agriculture, Animal Industry and Fisheries, who was the Chief Guest Hon. Tress Bucyanyandi said he was honored and privileged to welcome all participants to the 5th JASAR under the theme “*Towards Agricultural Commercialization for Wealth Creation*”. He noted that the theme was appropriate because all the different players were in agriculture to make money along the various aspects of the different value chains. He said the Ministry had concluded on the review of the DSIP and was embarking on the Agriculture Sector Strategic Plan (ASSP). He congratulated all stakeholders involved in the development of the plans.

Highlighting what was happening in Agriculture; the Minister said that agriculture production had increased from 1.4% to 2.3%, although it had not yet achieved the growth rate of 6% as expected. He further noted that the relative contribution of the sector to GDP was at 26%, while the national inflation rates were stable due to the continuous availability of food at reasonable prices.

Mr. Bucyanayandi noted that in 2013, 10 million people were engaged in agriculture (77% women & 66% youth), especially in the rural areas. He said there was a remarkable trend of growth recorded in commercial agriculture, for example, from the testimonies reported in the “Harvest Money” pullout in the New Vision newspaper. He, however, noted that, much as Uganda was relatively food secure, the country was experiencing malnutrition, which needed to be tackled.

He said that during the year under review, MAAIF undertook some restructuring of the extension services system with a thorough analysis of what to do and not to do. He reiterated the fact that all the stakeholders must continue to work together in this endeavour. He stated that OWC was an intervention that had come to assist in providing government services to the people.

The Minister noted some sector challenges including fake seeds, chemicals, etc., and appreciated that the sector now had the Agriculture police in its ranks. He said Agriculture police had been brought on board and they had started to arrest those involved in sale and distribution of counterfeit seeds, chemicals, etc., and that laws, regulations and policies in the Fish, Animal and Crop sub-sectors would be availed to the Agriculture police for use. He gave an example of the fisheries sub-sector where some people were masquerading as Authorized Officers in enforcement of the Fisheries Laws. He assured the participants that the Ministry had put up a list of Authorized Officers who were to work with the police and the BMUs.

He concluded by thanking all the participants and with great pleasure, declared the JASAR 2015 officially opened.

Launch of the Agriculture Police

As part of the proceedings, the Assistant Inspector General of Police (AIGP) Mr. Andrew Felix Kawesi, representing the IGP introduced the Agriculture Police and officially handed over the Agricultural Police Unit (APU) to the Ministry. He said that Uganda Police took up the

responsibility of establishing the APU as a result of a Cabinet directive. He noted that as the agriculture sector progresses, there were a lot of criminal activities hampering its progress. He said that the APU was designed to have 4 key organizational structures namely the *Command and Deputy, Livestock, Crop & Fisheries* (whose docket was under the Deputy Commander). He said the purpose of the APU was to provide backup to agricultural technical staff in enforcing agricultural laws, regulations and standards to achieve high levels of compliance and the main objectives were to improve the linkages between the technical regulatory departments under the Ministry with Uganda Police command structure in the districts and to sensitize the public on laws using the community policing approach.

He informed the participants that the APU would be decentralized to the lower levels to all the districts to handle agriculture enforcement, and they were to link up with other security agencies. He stated that the Unit had an enormous task in the control of production, marketing, value addition, movement, food safety, etc. in the agriculture sector. He assured the participants that the force had been vetted carefully since the Ministry was very sensitive and added that the APU was entirely under the control of the MAAIF. He said the APU would provide oversight role, such as effective operations noting that the officers had commenced the task and a lot had already been achieved. He appealed to them to be close to the Ministry staff and officially handed over the unit to the Minister for launch.

The Minister of Agriculture received the APU by extending appreciation to the Uganda Police Force for the enforcement support extended to the Ministry. He re-echoed the fact that the Security forces had already started work and were doing a good job, including the army under the OWC. He welcomed the police to the Ministry and officially launched the APU.

1.4.4 Presentations: Session Two

The second session was chaired by the Chairperson Sessional Committee of Parliament on Agriculture Hon. Mathias Kasamba. The Chair thanked all for turning up and for the good work being done towards improving food security and income of the people of Uganda. He extended apologies from the Members of the Committee of Parliament who were unable to attend the workshop. He thanked Government and the Ministry in particular for ensuring that Uganda was food secure. He urged all the stakeholders not to relax due to climate change and the level of the organization of the farmers. He raised a question that, as members assessed performance, how would the quality and volume of agriculture production be improved? He attributed the answers to the JASAR objectives.

1.4.5 Presentation on Agriculture Sector Performance FY 2014/15

The Director, Agriculture Extension Services, Ms. Beatrice Byarugaba, made a presentation, highlighting the mandate, vision and mission of the sector. The Mandate of the sector as “To promote and support sustainable and market oriented agricultural production, food security and household incomes”; while the Vision was to have “A competitive, profitable & sustainable agricultural sector” and the Mission was to “To transform subsistence farming to commercial agriculture”. She then made a detailed presentation on the performance of the sub-sectors as follows:

1.4.5.1 Crops Sub-Sector

a) Production and Export Trends

Coffee: There was an overall decline of 11% in coffee export in 60 Kg bags (3,237,924 bags in FY 2014/15 compared to 3,647,828 bags in FY 2013/14). This was mainly associated with the drought in the months of January and February 2014 (Masaka) and fly crops (smaller harvest) of Central and Eastern regions. Export earnings remained stagnant at US\$ 402.9M in the two years.

Cotton: Cotton production increased by 18% (93,093 bales in FY 2014/15 as compared to 78,364 bales in FY 2013/14) and this was due to intensive farmer mobilization and increased use of yield enhancing inputs (fertilizers and pesticides). However, Lint earnings decreased from US\$ 24.49M in FY 2013/14 to US\$ 21.22M in FY 2014/15 due to decline in Lint prices on the International market. There was an increase in lint consumed locally (518 MT) in FY 2014/15 as compared (438 MT) FY 2013/14.

Oil crops: The oil palm plantation in Kalangala stands at 10,717 ha (4,277 ha smallholder farms and 6,440 ha nucleus estate). The number of smallholder farmers receiving oil palm project services increased from 1,610 in FY 2013/14 to 1,700 in FY 2014/15. The loans to smallholder farmers for establishment and maintenance of their gardens increased from UGX 31.6 billion in FY 2013/14 to UGX 34.8 billion in 2014/15 and Farmers' total earnings increased from UGX 4.2 billion in FY 2013/14 to UGX 5.5 billion in 2014/15.

Tea: There was an increase in tea production from 64,000MT in FY 2013/14 to 65,900MT in FY 2014/15. However, exports reduced by 2.23% from 59,015 MT in FY 2013/14 to 57,700 MT in FY 2014/15 due to the reduction in export price. There were 28 active tea factories and new tea production districts of Kabale & Kisoro had achieved minimum quantities for factory establishment. 3% of the tea produced was consumed locally.

Cocoa: There was a 9% increase in cocoa production from 22,010 MT in FY 2013/14 to 24,008 MT in FY 2014/15. Export earnings increased to US\$ 67.2 from US\$ 58 billion in the previous FY 2013/14.

Rice: In 2014/2015, 240 MT of improved seed was produced and rice exports increased from 69,914 MT recorded the previous FY to 72,011 MT. She noted that Uganda was rice self-sufficient and production had increased from 212,000 MT the previous FY to 214,000 MT.

The Director provided details on the marketing & value addition of the various crops thus:

- a) **Coffee:** 5 new coffee factories had been opened in Nebbi, Paidha, Kasese and Mbale and new foreign markets had been opened up in Korea, Australia, and Ecuador.
- b) **Cotton:** The lint consumed by local industry increased from 438MT (2013/14) to 518MT (2014/15).
- c) **Palm Oil:** The second crude palm oil mill was under construction in Kalangala.
- d) **Tea:** There were 28 active tea processing factories.

e) **Fruits:** The setting up of a fruit processing factory was ongoing in Soroti.

b) Sub-Sector Challenges

The challenges faced in the crop sub-sector included;

- a) Low domestic consumption of coffee & tea;
- b) Low domestic value addition for cotton & cocoa;
- c) Low access to quality agro-input;
- d) Poor postharvest handling, storage and market linkages.

1.4.5.2 Fisheries Sub-Sector

Fish production Trends

The total production of fish rose by 11% from 517,313 MT (2013/14) to 572,759 MT (2014/15). Out of this quantity, capture fish contributed 80% and aquaculture, 20%.

Capture fish grew by 10%, mainly due to the upsurge in Mukene and other small fish species. On the other hand, Aquaculture increased by 13%. Cages on L. Victoria rose from 1,388 (2013) to 2,000 (2014), producing 1,739 MT & 3,155 MT respectively.

The fish export values increased by 15% despite the reduction in volume due to increased exports of the highly valuable fish maws.

e) Sub-Sector Challenges

The challenges faced in the fisheries sub-sector included;

- a) The continued decline in the large commercial fish species.
- b) The invasion of the water bodies by the new breed of weed (Kariba Weed).
- c) The limited public-private investment arrangements in aquaculture.

1.4.5.3.1 Livestock Sub-Sector

Population of livestock (projections in millions)

Species	Breed type	2013	2014
Population of Cattle	Indigenous	12.29	12.66
	Exotic	0.90	0.92
	Total	13.19	13.58
Population of Goats		15.80	16.59
Population of Sheep		4.14	4.30
Population of Pigs		3.89	4.04

- a) **Milk production:** Milk production increased from 1.93 billion litres (2013/14) to 1.96 billion litres (2014/15). The capacity of rural milk collection centres rose by 3.6% from 1.49 million litres (2013/14) to 1.55 million litres (2014/15).
- b) **Meat production:** Meat consists of beef, goat, mutton and pork and its production increased by 1.4% from 255,248 MT (2013) to 258,820 MT (2014).
- c) **Poultry- production:** The sub-sector produced and distributed 290,212 kuroiler chicks to farmers in 53 districts. The population of indigenous chicken increased from 53.2 million in 2013 to 58 million in 2014 and the population of exotic chicken increased from 3.6 million in 2013 to 3.7 million in 2014.
- d) **Processing and exports:** Milk processing plants grew from 53 in 2013 to 76 in 2014 and the installed capacity grew from 1.30 million to 1.77 million litres, including the production of a variety of dairy products. The dairy exports increased from USD 22.1 million (2013/14) to USD 23.6 million (2014/15), while honey trade rose from 12,000 MT (valued USD 38.4 million) in 2013/2014 to 12,400 MT (valued USD 39.7 million) in 2014/2015 and 11,000 MT of hides and skins were exported in 2014/15.

e) Sub-Sector Challenges

The challenges faced in the livestock sub-sector included-

- i. Endemic diseases;
- ii. Unregulated feed industry;
- iii. Scarcity of water for livestock.
- iv. Inadequate infrastructure for livestock production, processing and marketing;
- v. Lack of quarantine and laboratory infrastructure at ports of entry/exit;
- vi. Inadequate logistical support for vet inspection;
- vii. Inadequate engagement of subsector stakeholders.

1.4.5.4 Other Related Technical/Thematic Areas

Water for Agricultural Production (WfAP) & Sustainable Land Management (SLM)

The availability of water for livestock increased by 155,160 cubic meters while degraded lands were being improved and yields on demonstrations had increased by between 20–200%. 3,052 ha of irrigated land were rehabilitated for enhanced crop production and productivity, and, 6,500 ha of land were under conservation agriculture in 11 districts.

Agriculture Mechanisation

82 KM of farm roads were constructed in 8 districts and access to market linkages improved. 1,652 acres of farmland were opened in 10 districts, thus contributing to increased crop output.

Pests, vectors & disease control

Crop pests and diseases (Coffee Leaf Rust, Giant looper & sweet potato caterpillars, Quelea birds, Maize Lethal Necrosis and False Codling Moth) were controlled. BBW incidence reduced from 13% to below 10% in Ankole and Kigezi; and below 30% in Masaka. The major outbreaks of animal pests, vectors and diseases were Foot and Mouth Disease, Brucellosis & Rabies, each affecting at least 23 districts. These were either reduced or controlled. Regarding agro-input certification, 14,000 MT of seed were certified for sale (about 20% of total demand).

1.4.5.5 Agriculture Research & Development

The Director General of NARO Dr. Ambrose Agona elaborated on the key result areas of NARO which include technology generation, research extension farmer interface and institutional capacity strengthening. The performance summary under each of the key result areas were as follows:-

a) Infrastructure Development

The infrastructure developments included Buginyanya ZARDI, the Cassava Regional Centre of Excellence and NaRI, Kawanda.

b) Technology generation

	FY2014/15		
Key Performance Indicators	Planned	Achieved	Remarks
Technology Generation			
No. of improved productivity technologies generated	90	112	Enhanced support through Off Budget Projects
No. of research studies under competitive grants scheme	65	41	41 public sector projects granted 24 private sector projects shall be granted in 2015/16
No. of new varieties submitted to Variety Release Committee	30	18	Break in flow of ATAAS funds, exacerbated by lack of GoU counterpart funding

c) Research extension farmer interface

2014/15			
Key Performance Indicators	Planned	Cumulative	Remarks
Research Extension (R-E) Interface Promoted and Strengthened			
No. of technological innovations delivered to uptake pathways	50	143	Enhanced support specifically to seed multiplication and dissemination, notably by EAAPP & off budget seed multiplication projects.
No. of technological innovation platforms established &/or supported	21	37	Effective R-E collaborations, with DARSTs.

1.4.5.6 Institutional Issues

The key institutional issues were as follows:-

Review of MAAIF: In 2014, Cabinet directed MAAIF to adopt a “Single Spine Extension System”. The Directorate of Extension Services (DAES) was created and this has been functional, effective 1st July 2015. NAADS restructured and extension co-ordination transferred to MAAIF.

MAAIF coordination with LGs: Cabinet approved DLG and sub-county production structures that would link directly with DAES.

Capacity in MAAIF and LGs: 66.6% of the approved MAAIF establishment (754) had been filled and the process of filling 1,443 positions in DLG Production and Marketing and 3,236 sub-county extension positions were ongoing in the LGs.

Policies and legislation: The Plant Protection and Health Act 2015 was assented to by the President and considerable progress had been made in preparing the necessary policies and legislation in crop, livestock, fisheries and technical areas.

1.4.5.7 Sector Contribution to the Economy in 2014/15

There was continued sector growth (from 1.5% in 2013/14 to 2.3% in 2014/15) and inflation was generally stable mainly because of low food prices but also due to low global inflation and low oil prices. In 2014 and 2015, over 80% of households in Uganda had adequate food availability. The Challenges of food security were food access and utilization. Agriculture contributed about 53% of value of total exports.

In summary, the Sector contributed to positive outcomes towards economic growth, low inflation and enhanced food security. Commodity production and export trends portrayed a mixed picture. There was positive service delivery in thematic areas though with several

challenges. A number of policies were formulated, reviewed, approved and some launched. MAAIF and agencies had capacity to absorb the released resources.

1.4.5.8 Budget Performance for FY 2014/15 presented by the Commissioner for Agriculture Planning Department

The Commissioner for Agriculture Planning made a presentation, analyzing the budget performance for FY 2014/15. He noted that, overall; the sector had an approved budget of UGX 473.835 billion (Excluding taxes, arrears and Non Tax Revenue). By end of June 2015, UGX 409.653 billion (91.4%) had been released, of which UGX 392.005 billion (95.7%) was spent on the various activities of the different institutions in the sector. He further said that the Sector Budget Performance (expenditure against releases) was 95.7%, which was a good performance, indicating the strong ability of the sector to absorb funds for activities approved for implementation in the Ministerial Policy Statement 2014/15.

He made an analysis of the expenditure, stating that the excess releases against the approved budget were created by supplementary releases to the following Vote Functions:

- a) **Crop Vote Function:** Supplementary fund released for the purchase of land for the creation of an oil palm nucleus estate in Buvuma in accordance with the Agreement between Government, IFAD and BIDCO under the VODP 2 project.
- b) **Animal Vote Function:** Supplementary funds released to cater for settling outstanding obligations/ civil works certificates for construction of livestock and fisheries markets and water infrastructure.
- c) **Breeding & Genetic Development Vote Function:** NAGRC&DB obtained supplementary funding to cater for the funding gap in its wage bill and also cater for animal restocking activities.

1.4.5.9 Agric Priorities for 2015/16

The Commissioner highlighted the Agriculture Sector Priorities for FY 2015/2016 that were being implemented in line with the Public Finance Management (PFM) Act 2015 and in accordance with the National Development Plan II. These included the following:

- a. The continuation of re-structuring and implementation of the refined Agriculture Single Spine Extension System, involving recruitment of extension workers at the district and sub county levels. Accordingly, a Directorate of Agricultural Extension Services had been established and was operational.
- b. Intensifying efforts to ensure control of pests, vectors and diseases
- c. The continuation of improving the Agricultural Information System between the center, district production departments and the farmers;
- d. Ensuring the adequate availability of farm inputs at farm level (fertilizers, seed, planting, breeding, pasture, feeds and stocking material).
- e. Increasing water for agricultural production at farm level through direct public project support and promoting Public Private Partnerships (PPPs). The activities would include initiation of activities to set up medium to large community irrigation schemes and setting up on-farm small scale irrigation demonstrations. This would be done under the government WfAP development programme with the help of heavy earth moving

equipment and projects of Enhancing National Food Security through Increased Rice Production, the Agriculture Cluster Development Project and the JICA supported project on Irrigation Scheme Development in Central and Eastern Uganda.

- f. The continuation of subsidy to the construction of valley tanks and valley dams for various farmers in water stricken areas, with the use of the MAAIF heavy earth moving equipment.
- g. The intensification of efforts to broaden awareness for agri-business enterprises to have access to Agriculture Finance Credit and Credit Guarantee Scheme Services, in partnership with the Ministry of Finance, Planning and Economic Development (MFPED).
- h. Supporting value addition of priority commodities and this would be provided through procuring and distributing inputs for value addition.
- i. Intensifying regulation and enforcement activities in crop, livestock and capture fisheries. The Agriculture Police Unit had been operationalised to support enforcement and prosecution activities.

The Commissioner made an analysis of the approved budget for 2015/2016, highlighting the points that the approved budget allocation to the Agriculture sector in the FY 2015/16 was UGX 479.96 billion, out of the National MTEF of UGX 23.972 trillion, representing a 2.0% allocation to the agriculture sector. He also compared this to the FY 2014/15 approved sector budget which was UGX 473.83 billion out of the national budget of UGX 15.042 trillion, representing a 3.1 % allocation to the Agriculture Sector. Hence, the proportion of the agriculture sector budget to the national budget had decreased from 3.1% in FY 2014/15 to 2.0% in FY 2015/16.

He noted that, whereas the national budget, in nominal terms, had increased by 59.4% from FY 2014/15 to FY 2015/16, the Agriculture sector budget had only increased by 1.3%. Furthermore, according to Bank of Uganda statistics, annual headline and core inflation rates, up to August 2015, stood at 4.8% and 5.5% respectively. This indicated that the purchasing power for the sector had greatly declined, thus a decline in the sector budget in real terms.

1.4.5.10 Highlights of the OWC programme

The Chair of the third session, the Coordinator OWC Programme, General Salim Saleh made opening remarks, giving highlights on the OWC programme. He said that agriculture was the backbone of Uganda and the OWC programme was created in line with the NDPII to eradicate poverty and to create wealth. He further said that the OWC focus was to increase efficiency and effectiveness of coordination & collaboration of the stakeholders and that clear communication was one of the focus areas.

He enumerated on the achievements of the OWC programme which included the livelyly debate that had been created in the agriculture sector e.g. poor seeds, sick animals, etc. This had brought out issues in the sector, including markets, targeted interventions, etc. The programme had also connected with and mobilized a sizable population and various stakeholders to streamline the sector.

He said Public-Community-Private Partnerships had been established in the Ministries of Agriculture, Trade, Finance and Lands and that NAADS interest was to end after season 6

because stronger cooperatives would have been created. Nevertheless, it was still in season 4. He also said that the farmers and farming communities were the target.

He said there was need to involve the contribution of the private sector into the Agriculture sector, including seeking ways of establishing quality markets. He further affirmed that Development Partners were key contributors to strengthening the sector and OWC was to enter a Memorandum of Understanding (MoU) with World Food Programme (WFP). He said various stakeholders in the sector needed to ensure coordination, collaboration and communication along the value chain. He recognised that challenges still remained e.g. streamlining marketing, quality inputs, post-harvest losses, etc.

He welcomed the Minister of the Presidency in charge of Coordination of OWC inter-agency collaboration and then invited him to the signing of the MoU between WFP & GoU on storage programme. The signing was done by the Minister, Representative of WFP & the Coordinator OWC).

The Minister of the Presidency Hon. Frank Tumwebaze, in his remarks, congratulated the GoU & WfP for the MoU. He further congratulated the Coordinator OWC & team (UPDF) for the impact created, based on the actions being taken. He said that the MoU that had been signed laid obligations of GoU & WfP to support post-harvest handling & storage, marketing & market infrastructure development (information, market technologies, etc) and to offer logistical & operational support. It also laid an obligation to use its role to support other stakeholders such as small holder farmers to boost income. The MoU also included input distribution by the Ministry towards production & productivity improvement. He further noted that all players in the agriculture sector should all be engaged, with mobilisation and coordination by the Ministry.

1.4.5.11 Statement by Development Partners representative

Mr. Gahma, on behalf of the Agriculture Development Partners (ADPs), thanked GoU & MAAIF in particular for successfully organizing the JASAR. He said he was happy that the CSOs were represented in the review and further noted the importance of agriculture in livelihoods and household income. He stated that the DSIP & ASSP promote farming as a private business.

Mr. Gahma said that the ADPs noted that issues such as farmers' access to inputs for agriculture improvement were very important. He said lack of quality inputs limit the OWC programme. He also said that ADP would help GoU on the review of Sanitary & Phytosanitary Standards. He further noted issues of access of farmers to extension services and farmer's access to land (tenure, unclear property rights, fragmentation, etc).

He said the ADPs appreciated regular consultations by the stakeholders but the Agriculture Sector Committee Reviews had been limited. He said there was need for Private Sector & Development Partners participation. He also said there was need for priority alignment with Development Partner's priorities so as to complement Government priorities and dialogue with the Ministry. He reiterated the strong commitment of the Development Partners to agriculture transformation in Uganda.

1.4.5.12 Operation Wealth Creation Experiences, Lessons and Way Forward

The Executive Director NAADS, Dr. Samuel K. Mugasi made a presentation on the NAADS progress for FY 2014/15 in supporting the implementation of Operation Wealth Creation (OWC).

He said there were a lot of opportunities for wealth creation such as the total world population which was on the increase. He said in 1950, the world population was 2.5 Billion and Africa's Share was 9%. At present, it was 7.3 Billion and Africa's Share was 16%. It was projected to be 9.5 Billion in 2050 & 11 Billion in 2100 and Africa's Share would be 25 & 39% respectively. He said these statistics illustrated the immense demand that was just around the corner and that consumers in places like China and India, where an emerging middle class could afford a better diet were eating more of everything, especially high-protein meat. He said this was an opportunity that we should prepare for.

He also said that with the growing demand for food, prices would invariably increase. He further noted that, in order to meet the growing demand, the world's farmers would need to produce more food in the next 50 years than farmers had produced in total over the last 10,000 years. He noted the challenge of agricultural land diminishing and effects of climate change but proposed that more people needed to be drawn back to agriculture and to improve on the existing technology, from breeding to machinery and equipment. Hence, was Uganda well positioned to benefit from this opportunity as a stepping stone for wealth creation.

Mr. Mugasi said that Government restructured NAADS & refocused its mandate to address critical demands for accelerating agriculture commercialization, food security and household incomes for farmers countrywide. The major output areas for the NAADS Secretariat included management of agricultural input distribution chains; Strategic interventions for priority commodities under the commodity approach, including multiplication of planting and stocking materials; Agribusiness development and Value chain development focusing on the upper end of the chain.

He said seed for various commodities were distributed across the country covering acreage of approximately 403,796 acres. Vegetative materials/seedlings for various commodities were also distributed across the country covering acreage of approximately 192,698 acres. The presentation provided details, in numbers, of the different types of commodities and enterprises, each with the annual target, achievement, percentage achieved, expected yield and accompanying remarks. The seed included Maize, Bean, Rice, Soya, Simsim, Sorghum, Groundnuts, Cocoa Seedlings, Mango Seedlings, Coffee seedlings, Tea Seedlings, Orange/citrus seedlings, Irish Potato seed (Bag) and Cassava Cuttings (Bag) for the crop sub-sector. The performance for other sub-sectors included Livestock- Beef (Beef Bulls), Artificial Insemination kits, Goats, Pigs (gilts, boars); Poultry (Layers & Kuroliers); aquaculture (Fish (Unit); Apiary (Apiary Units and Production and Value addition equipment (Maize Milling equipment with Engines/Motors & Installation -(Set), Milk Coolers and Matching Generators (including installation) - (Set). The detailed data on performance is provided in the performance review report for 2015.

The challenges facing NAADS/OWC included:

- a) Lack of proper coordination of all key stakeholders across the value chain i.e. from farm to fork; research, infrastructure, budgeting and planning, financing, processors and exporters, etc.
- b) Lack of storage/value addition and high post-harvest losses.
- c) Weak input and output markets.
- d) Weak extension system.
- e) Lack of affordable agricultural financing.
- f) Water for production and mechanization.

The recommendations for the way forward were as follows:

- a) Move quickly to strengthen coordination and linkages of all stakeholders along the value chain.
- b) Build capacity for storage – from community level to large scale; efforts are on-going between OWC/NAADS, WFP and TGCU.
- c) Build capacity for agro-processing - PPP arrangements could be considered.
- d) Strengthen input markets – focusing quality control and availability; seed, fertilizers, agro-chemicals etc.
- e) Strengthen outputs markets through empowering farmers group/cooperatives, removing systemic barriers; market information, quality standards, roads, electricity and supportive policies.
- f) Speed up the rebuilding of the extension system;
- g) Develop affordable agricultural financing models.
- h) Mitigate climate change effects – focusing on smallholder systems.
- i) Develop smallholder farm mechanization systems.

He concluded with a quote that: *“If you want to get rich, you should invest on the farmland”- Jim Rogers*

1.4.5.13 Private Sector Status of Investments along Agricultural Commodity Value Chains

Ms. Sarah Kibenge, representing the Executive Director, PSFU made the presentation, highlighting that PSFU had noted an increase in Agricultural Investments by the Private Sector and were continuing to grow (Currently 56 (30%), PSFU members in sector among which were associations, processors and SMEs, seeds, etc.). She noted that there was increasing Government support towards private sector investment in agriculture (DSIP, NDP, Agriculture Credit Facility). She appreciated that the National Agricultural Policy of 2013 set a framework for investments in the sector and delivery of services and the Private Sector and hoped that it would be the sector’s engine of growth.

Ms. Kibenge informed the meeting that the private sector was involved in pre-production, production, post-harvest handling, processing and marketing. Under the Crop husbandry, they were involved in Seeds, planting, weeding, harvesting, storage, processing and marketing. In the Animal, Poultry, Fisheries sub-sectors, they were involved in Breeding, rearing, feeding, butcheries, hatcheries, processing and marketing. Other supporting services included Extension Services, Irrigation services, Tractor hire services, Transportation, Credit facilities,

Insurance services, Animal feeds, Veterinary services, Maritime services, Freight forwarding and Quality control.

She said that government interventions required were as follows:-

- a) Regulatory framework that enables private sector growth and investments in Agriculture- (Policies should be implemented and not shelved)
- b) Implementation of the Agriculture Credit Facility and make it accessible for players to use.
- c) Value Chain Analysis -
 - a. Study, identify key investment areas & weak links
 - b. Design appropriate timely support measures to bridge the gaps.
 - c. Develop a PPP framework supporting dialogue amongst all stakeholders
 - d. Work with seed companies to ensure quality.
- d) Tax policy Issues- Need to provide appropriate tax incentives that support Local, national and regional trade.
- e) Develop Infrastructure such as Roads, Railway networks, electrification particularly to support private sector investments in Agro-processing and value addition, telecommunication, water for production among others.
- f) Plan and allocate appropriate budget for agricultural development.
- g) Develop early warning systems that support adequate planning and investments in agriculture- e.g well equipped and functioning weather forecast stations,
- h) Support investments along various value chains. Need to bridge the gap between businesses at the various levels in the value chains (e.g. finance institutions are less willing to support agricultural development initiatives sighting high risks).

In conclusion, she said private sector involvement in the sector was growing; government should continue encouraging PPP and extend support.

1.4.5.14 Local Government Perspective on Agricultural Sector Performance

The Secretary General ULGA, Ms. Gertrude Rose Ddamulira made a presentation, highlighting that ULGA was proud to associate with MAAIF. She said the move to create a Directorate of Agricultural Extension Services (DAES) was appreciated the Local Governments since this would greatly contribute to the provision of effective and efficiently coordinated Agricultural Extension Services in the country.

She also said that the Local Governments appreciated the Operation Wealth Creation (OWC) initiative, which was launched in 2014, by His Excellency the President of Uganda. One of the objectives of the initiative was to streamline the output marketing structures through farmer cooperatives/institutions, handling post-harvest handling structures, and marketing, addressing both domestic and international markets, among others. It was however very important for Government to consider the revitalization of Farmers Cooperatives, particularly in the provision of Capital to Farmers to necessitate value addition through commercialization.

The Secretary General also highlighted on the outstanding areas for improvement to strengthen Local Government performance in the Agricultural Sector as follows:

- a. **Effective implementation of the 2003 Maputo Declaration** which calls for commitment to the allocation of at least 10% of the National Budgetary resources to Agriculture.

- b. **Need for a Policy on Urban Agriculture.** Without a policy to guide both urban and peri-urban agriculture, we shall continue to witness a lot of disorganization in our towns, brought about by unguided urban farming.
- c. **Restructuring of the Agriculture Production Department.** ULGA noted that the pace at which this was being done was very slow affecting efficiencies and effectiveness in service delivery in the Agriculture Sector. The process needs to be fast tracked and Local Governments be supported by the Sector to fill up key positions under the Production Department.
- d. **Implementation of the Single Spine Structure.** ULGA noted that the majority of the Local Governments had not yet recruited Extension Officers and Production Officers at both the District and Sub County levels as per the approved structure by Cabinet. Out of the 1,443 approved technical positions in the structure, only 268 had been filled at the District level, leaving a gap of 1,175 whereas at the Sub County level, out of 3,236 positions only 389 had been filled leaving a gap of 2,850. ULGA recommended that MAAIF should ensure that the proposed staffing structure is catered for in the next Financial Year's budget, to ensure the provision for a sufficient wage bill for the outstanding posts.
- e. **National Agricultural Advisory Services Grant** The utilization of the NAADs grant remained uncertain to the Local Governments given that the procurement of equipment and agricultural inputs was handled by the NAADs Secretariat on the one hand, and their distribution by the Army Officers. Local Governments had also noted some irregularities in the distribution process of agriculture inputs to communities, the Local Leaders were not involved and that the Army demanded for facilitation from District Officials. Additionally, whereas the roles of stakeholders were clear in the Standard Operating Procedures that were issued by NAADS Secretariat, the provisions had not been followed. There was need therefore to carry out more sensitization to avoid conflicts. ULGA's recommendation therefore was that the provisions of the Standing Orders of Procedure for the operations of Operation Wealth Creation be upheld and adhered to during implementation and that there should be active involvement of Local Government Leaders to ensure harmony in the implementation of the programme.
- f. **Production and Marketing Grant.** The Production and Marketing Grant was still very inadequate which negatively affects the implementation of production activities. This coupled with the introduction of Operation Wealth Creation, calls for more funding for both recurrent and capital development funds. ULGA proposed an increase on the Production and Marketing Grant to cover the activities of Operation Wealth Creation and its use in accordance with the guidelines provided. This would also provide for more flexibility in utilization guided by the prioritized needs of the communities. They also proposed that the re-instated staff/ general extension staff receive adequate facilitation and tools to perform their roles effectively and also that there was need to integrate and take advantage of the already mobilized farmer groups under the Operation Wealth Creation initiative to improve and ease the extension staff's work towards training and the provision of follow-up advice.

- g. **Utilization of Manure Produced by Municipal Councils.** During the Sector Conditional Grants Negotiations for the FY 2015/16, MAAIF committed itself to the development of the National Fertilizer Policy and Fertilizer Strategy, something ULGA noted had not been done yet. In addition, in line with the guidance provided by MAAIF to ensure proper certification of the quality of manure produced, Local Governments had endeavored to adhere to this requirement. However, the LGs noted the existence of an inadequate market for the manure produced. This had been aggravated by the inadequate staffing in the Production Department particularly the Commercial Officers who were responsible for the marketing function. In addition there was need to equip the officers with the necessary marketing skills for this product. ULGA recommended that:
- i. MAAIF provides an update on progress made in development of the National Fertilizer Policy and the related Strategy.
 - ii. MAAIF works together with the Ministry of Trade, Industries and Cooperatives in designing market strategies for Local Governments producing manure.
 - iii. Both Ministries of Agriculture and that of Trade follow up with Ministry of Finance as well as that of Local Government and Public Service on approval by Cabinet of an independent Department for the Commercial Services and its related wage implication.
- h. **Transport facilities.** ULGA continued to note the inadequate transport facilities for the Production Department. Given the fact that there was ongoing recruitment of new staff at the District Production level, there was need to provide transport facilities such as motor vehicles and motor cycles and other requirements such as demo kits and training materials for better service delivery.
- i. **Irrigation:** LGs reported the persistent increase in climate change which had shifted the rainfall patterns. This had affected crop production due to long dry spells. In addition, it was also noted with concern that the agriculture inputs and seedlings to LGs during the dry season when planting could hardly be done. It was therefore recommended that Demonstration Farms on Irrigation be equitably established at a Regional level and later be rolled to District level.
- j. **Commercialization Challenge Fund (CCF) Implementation Guidelines:** Having revised the implementation modality for the support given to commercializing farmers under Commercialization Challenge Fund (CCF) Window 2 which includes the change from individual farmers to farmer groups, associations, cooperative societies or unions, the NAADs Secretariat had been working on the CCF framework to guide on the implementation of the fund and had reported printing 600 copies. However ULGA noted that no copies had been availed to the LGs. Further still, LGs remained unsure as to whether the fund was still on course after the revision of NAADs. ULGA recommended that:
- o MAAIF provides information on the status of operation of Commercialization Challenge Fund Window 2.

- If confirmed that the Fund was still operational, MAAIF should ensure the dissemination of the Commercialization Challenge Fund Window 2 guidelines to the Local Governments.
- k. Regulatory activities like pest and disease control, livestock movement, Agro- chemical shops at Local Government level had not been given enough support from the parent ministry to improve service delivery. ULGA recommended that the Ministry should provide support to the LGs in addressing challenges related to management of pests and disease, livestock movement and Agro – chemical shops to improve service delivery.

Reactions/Comments

- a) On the issue of recruitment, MAAIF response was that the Ministry of Public Service gave guidance that LGs should start recruitment. This financial year, UGX. 10 Billion had been given and the exercise was ongoing.
- b) The OWC Coordinator asked when they could meet to harmonize with the private sector. He also said CAIIP had procured machines which were not being used eg. Tororo maize mills, milk coolers, etc. What was the comment from the LGs?
- c) The recommendations made in the last JASAR were still being repeated. This needed to stop e.g. Auditor General’s reports. Why were we not planning together as government? For instance, the LGs programmes would be reflecting OWC but disjointed work in government was going on.
- d) The increased number of non-state actors in the meetings was noted. However, one participant was not sure of what he was going to tell the farmers about NAADS because he thought NAADS was scrapped but from the workshop saw that NAADS & OWC were together. He also noted that OWC was not included in the LG plan and budget. How was the OWC going to be supported?
- e) The Ecosystem Based Approach was being emphasized but this had not being considered in the sector plans.
- f) Many facilities in the communities were not being used. Could LGs create an opportunity for the local people to be part of the planning process?
- g) Was there no interface between OWC and the LGs? Where were the relevant agencies of government e.g. Public service, Finance to address the issues being raised? There was no need to lament in the meeting but to need seek ways for linkages and collaboration.

Responses

- a) On the issue of machines procured under CAIIP, the CAO Tororo said that two agro-processing plants were functional. He said the Coordinator of OWC promised to assist to contact the private sector on the matter otherwise five other machines had issues related to power and motors.
- b) The Coordinator OWC said that under CAIIP, the report indicated that all was ok but only 30% was functional.

- c) There was need for a clear action on coordination of all the partners/players. The OPM promised to come up with a coordination policy, need to find out progress.
- d) The issue of climate change adaptation had been highlighted by NARO but there was need to strengthen coordination e.g. with the Ministry of Water & Environment.
- e) The list of private sector dealers to be availed to MAAIF by PSFU.
- f) NAADS has not been scrapped but restructured.
- g) Local Development Policy-MoLG local development policy is in place but may be not yet approved. MAAIF needs to know about this policy. It is to operationalize the decentralization policy.

1.4.5.16 Recap of Day One Proceedings

The workshop Facilitator, Mr. Allen Kebba made a recap of the proceedings on day one. The highlights included the statement by PS MAAIF, the Minister of Agriculture, Launch of the APU, sector performance review, focusing on production and productivity performance, Budgetary performance, Development Partners remarks, OWC Presentation, Signing of MoU between GoU & WfP, Local Government and Private sector

1.4.5.17 JASAR 2013/14 Recommendation

A presentation on the JASAR & Government Annual Performance Review Report (GAPRR) for FY 2013/14 recommendations was made by the Assistant Commissioner, M&E. The presentation on the JASAR 2014 covered thematic areas, recommendations and progress as follows:

a. Extension Service Provision

- Develop guidelines for a single spine extension system which will act as a mechanism to streamline and strengthen coordination of Single Spine Extension System in the Country
 - Directorate of Extension Services established
 - Implementation of DAES started on 1st July 2015
 - Extension Strategy formulation and guidelines are among the startup activities – on going
- Develop and disseminate guidelines to inform the NAADS transformation process as soon as possible enable NAADS carry on with its new mandate
 - Government restructured ATAAS in FY 2013/14 under which extension was transferred from NAADS to the Ministry
 - NAADS role is largely procurement of inputs under Operation Wealth Creation
 - SOP for OWC developed and disseminated

b. Information dissemination

- Provide adequate, reliable and timely information to farmers and also establish a communication strategy to facilitate information flow linkages
 - Extension staff are the focal units for information dissemination

- Early warning messages disseminated at planting seasons
 - Communication strategy developed
- Create toll free hotlines where farmers can reach researchers and other providers of agriculture services hence extension of services to them
- Toll free line exists under NAADS Secretariat
 - With extension transferred to Ministry under restructured ATAAS, and DAES being functional as of July 2015, the TFL facility will be established in the DAES

c. Agricultural mechanization

- Disseminate guidelines to facilitate rationalized use of agricultural machinery in order to ease accessibility of machinery for agricultural production initiatives
- Guidelines to access the heavy machinery are in place and being implemented

d. Fisheries

- Guidelines to streamline the enforcement function among the fisheries stakeholders should be developed
- Standard operating procedures for enforcement developed
- Commission a Fisheries survey to provide sufficient data and statistics for planning and setting realistic targets
- Fisheries surveys conducted on capture fisheries.
 - Establishments of EFMIS- Electronic Fish market information system by SMARTFISH Project

e. Research and technology development

- Strengthen the linkage between research and farmers through encouraging research based on farmers' needs and multiplication of the technologies to meet their specific needs
- Joint priority setting guidelines developed under ATAAS.
 - Review and planning meetings organized by ZARDIs for diverse stakeholders including: the private sector, farmers, other government agencies, educational institutes, Farmer's Organizations and others.

f. Distribution of agricultural technologies

- Agricultural technologies to farmers should be based on the farmers' demands
- Currently, agriculture inputs being distributed under Operation Wealth Creation. These are based on needs by individual districts.

g. Distribution of agricultural technologies

- Scale up the regulatory activities to control counterfeit agricultural inputs
 - MAAIF has put in place Police that is backing up enforcement activities
 - More inspectors have been recruited
 - To fill the gap in seed production, MAAIF has engaged Prisons to produce seed on their farms.
 - MAAIF is supporting PPPs with seed producers on how they can do self-policing through codes of practice.

h. Land for NARO

- Survey and acquire titles for all NARO Land
 - Management moved to secure boundaries of all the institutes, albeit with challenges

i. Collaboration and Synergies between Academia, Training Institutions and MAAIF

- Promote Joint Development of Agricultural related programmes
 - Collaboration with academia on going through Sector Working Group

j. JASAR

- Conduct JASAR at regional levels which provide a strong base for the national JASAR.
 - Had not been provided for in FY 2014/15 budget but will be undertaken for FY 2015/16

k. Plan reviews and evaluation

- Conduct Midterm and end of plan reviews and evaluations
 - Review of DSIP 2010/11 – 2014/15 undertaken and informed the design of the Agriculture Sector Strategic Plan 2015/16 – 2019/20.
 - All large MAAIF projects have a provision for MTR and End of Project Evaluations in line with the National M&E Policy.

The issues, recommendations and progress on the Government Annual Performance Report 2013/14 were as follows:

i. Unacceptably high post-harvest losses

- Promote appropriate post-harvest technologies
 - Agriculture Development Project (ACDP) developed; a big component on post-harvest handling like promotion of storage bins, silos, warehouses, and improved drying methods.

ii. High prevalence of malnutrition in children under five years

- Implement Nutrition Advocacy and Communication Strategy to improve child care practices.

- Development of the Nutrition advocacy and communication strategy through a multi-sectoral approach coordinated by OPM completed.
- Ensure a multi-sectoral approach to Scaling up nutrition interventions
 - A 5 year Global Agriculture Food Security Program (GAFSP) funded project: The Uganda Multi-sectoral Food security and Nutrition project (UMFSNP), led by MAAIF and implemented in conjunction with MOH, MOES, MoGLSD & DLGs will begin full operation by November, 2015.
 - MAAIF is working closely with other sectors in the implementation of Uganda Nutrition Action Plan (UNAP).
 - A food & Nutrition Handbook for Extension Workers has been developed.
 - Draft guidelines to design nutrition sensitive agriculture enterprise mixes have been developed & slated to be launched by December 2015.

iii. Increasing food insecurity

- Improve agricultural extension services to farmers to increase production in all regions
 - Government streamlined the Public Agricultural Extension Service and created a strong “Single Spine” National Agricultural Extension delivery system

iv. Improving the adoption of new varieties developed by NARO

- Strengthen District Adaptive Teams and implement other measures developed by MAAIF to improve adoption.
 - Under the restructured ATAAS to be implemented by MAAIF and NARO, District Adaptive Research Teams are to be capacitated.
 - Programme for DARSTs refresher training being developed under the ATAAS.

v. Improving food security

- MAAIF to evaluate food security situation of the country and make a comprehensive report to Cabinet
 - Food Insecurity Chronic Analysis undertaken in February 2015 using secondary data from reputable institutions and to be finalized.

vi. Increase availability of formal financing with favorable terms

- Submit to Cabinet Proposals on the Establishment of a National Agricultural Bank.
 - The banking act is currently being reviewed for appropriate proposals.

1.4.5.18 Civil Society perspectives on Agricultural Sector Performance over FY 2014/15; Challenges, Lessons and Recommendations

The presentation was made by Ms. Agnes Kirabo, the Executive Director Food Rights Alliance. The alliance represented entities that had a composition of organisations/non state actors that included NGOs (400), media, private sect (2323), professional bodies (68), farmer’s organisation (1000) and academia.

She said that the Sector performance, in growth terms, had been at 7.9% in 2000, 0.9% in 2010/2011 and 1.5% in 2013. She questioned what had gone wrong since 2000? She further made a comparison of the agriculture sector growth in EAC (and its contribution to national

GDP for the years 2010/11(24.7%), 2012/13(25.3%), 2013/14(24.8%). She also made a comparison of the agriculture sector contribution to the EAC GDP (%) from 2010-2013 and Budget allocations (tables), she implored the CSOs to refocus and advocate for more budget allocation to the sector. She provided some figure for the budget allocation on agriculture in the EAC such as Rwanda (5.97%), Uganda (3.35%) and Kenya (3.15%).

She further highlighted on the human resource gaps in the sector, providing figures for the approved technical posts, those that have been filled and those that were still vacant at district, sub-county and HQ levels (table).

As far as Agriculture Extension & Advisory Services (table) was concerned, she said in 2014, 50% of the sector allocation was allocated to the directorate but 40-50% of the farmers were still receiving extension from fellow farmers. She said there was need to facilitate the directorate to harmonise the extension service providers.

Challenges

The view on the challenges in the sector were as follows:

- a) Scattered interventions and funds. How harmonized were the interventions? Who was responsible for coordination, planning etc?
- b) Data and information Management System were very worrying, even scattered in the ministry;
- c) Liberalization of the economy;
- d) Seed and input distribution;
- e) Harnessing competitiveness.

Recommendations

She said CSOs were recommending the following:

- a) Participation, Partnership and Collaboration with Non-State Actors;
- b) Comprehensive domestication of agriculture related commitments;
- c) Strengthening data and information systems of MAAIF;
- d) Strengthening tenure security of MAAIF land.

She concluded by saying that the Non-State Actors were making 10 commitments to do the following:

- a. Collaborate and partner with Government and MAAIF to inform, design, and implement the pillars of the ASSP and as well as the development of the ASSP results framework.
- b. Popularize Government programmes and policies and harness our power to invest in the sector through undertaking advocacy and mobilize resources for increased public and private investment and expenditure in agriculture.
- c. Education and capacity Building: Committed to mobilize the farmers, build their capacities to competitively produce in collaboration with the ministry. Further, we are committed to re-align our work and resources to fulfill our roles and responsibilities in line with ASSP and Ministerial priorities.

- d. Supporting the establishment and strengthening of farmers networks, groups associations and cooperatives to increase farmers' productivity and production, bargaining power, role in the value chain, market and credit access and financing.
- e. Continue to conduct policy analysis and empirical studies on issues related to budget and sector performance to inform policy change and provide alternative policy proposals
- f. Review and Monitor Sector performance: Support the sub-national and national bi-annual, quarterly and Annual Joint Sector Review meetings through partnership arrangements
- g. Create linkages; deepen the farmer-research interface and farmers' participation in research and technology utilization for increased productivity through partnerships with government and non-state research institutions.
- h. Harmonization and mapping of NSA work: Committed to map NSA activities, linkages and synergies to create efficiency and avoid duplication of work, wastage of resources and increase impact on rural farming communities.
- i. Developing partnerships between NSAs and agricultural and finance ministries to improve agricultural financing and to increase private sector investment through multi-stakeholder platforms and the development innovative solutions involving both more appropriate financial products and processes, and increased capacity of agricultural borrowers to be successful and thus bankable and investable
- j. Developing value chain platforms driven by private sector farmers and agribusinesses and collaborating with other NSAs and with government ministries (agriculture, finance, trade) to increase the success of the production, value-addition, input supply, and marketing and export agribusinesses along the value chain.

1.4..5.19 Access to Financial Services by Association of MFI of Uganda (AMU)

The presentation was made by the Executive Director, Mr. David Baguma. He said the National network has been in place since 1996 for all institutions that have interest in making microfinance work. He said that accessing finance could be through rural finance, value chain finance or agriculture finance. He also provided the source of credit and uses of credit.

He said there a number of opportunities in the sector such as food being one of the most important items for humanity, the methodologies that had proved to work and were acceptable by various lenders, the fertile soils and weather and the companies involved in production and the value chain.

Challenges

He said there were challenges however, such as the following:-

- a) Demonstrating where rural agriculture finance portfolio was successful;
- b) Measuring indicators and at what frequency?
- c) What program innovation in Rural Agriculture Finance (RAF) initiatives were leading to deeper impact?
- d) GMOs;
- e) What forms of finance specific financial instruments or technologies were reducing poverty and improving well-being.

Recommendations

He said the sector should take into consideration the following recommendations:

- a) PPP in agriculture mechanization at least in each district.
- b) Coordination of agriculture planning and implementation.
- c) Ensuring that Champions in each area of agriculture were strategically positioned i.e. zoning, commercialization of key crops (large scale), animals and subsidy in irrigation, mechanization and price stabilization.
- d) Ensuring high standards in production, storage, value chain and packaging which lead to increase in out growers, employment and marketing.
- e) Government's main role and reason was to ensure a healthy population and better livelihoods, living in an enabling and peaceful environment

Reactions/comments

- a) Government must take care of everybody. The Private Sector and CSOs have put a lot of resources out there but what was normally seen was what government had put in place.
- b) CSOs have done a lot but we were not coordinated to know what, where and how to monitor them in MAAIF. There was need to harmonize activities/coordination i.e. the strategy for the agriculture sector should be known by MAAIF. It was also important to know or to put a face to the people we were working with for instance the coffee farmers, where are they & what was their numbers through a database that captures what, where, when, how much, etc.
- c) Deliberate efforts be made to encourage and target the youth (66%) and women (77%) involved in agriculture, especially in the value chain, with more focus being put on rural industrialization.
- d) There was need for affordable credit & information on credit facilities e.g. interest on the credit, etc. The call for establishment of the National Agriculture Bank was because microfinance institutions had failed on the credit aspect, basically due to high interest.
- e) There was need to promote technologies that produce what we want, taking into consideration affordability and accessibility.
- f) Some projects being carried out by government end up in wrong hands. Private Sector role needed to be appreciated.
- g) AfDB, ECOWAS, EAC etc had case studies on agriculture financing. On this basis, could we do a comparative analysis in Africa on funding agriculture commodities e.g. the case of Cote de Voire on cocoa? Why were these countries succeeding and not Uganda? The Dean, Faculty of Science & Agriculture, Busitema University was tasked to write a paper and concept on how best farmers could be financed and Hon. Marthias Kasamba was to follow up on the assignment.
- h) Science University technology innovations need to review curriculums to focus on e.g. animal traction, etc.
- i) Farmers were ignorant but not stupid and therefore, it was our responsibility to deliver information and technologies. There was need for government to use existing capacity e.g. University students, CSOs, etc through appropriate policy/guidelines/frameworks and support and also by strengthening MAAIF.
- j) Discourage dependency if we are to treat agriculture as a business. Farmers should be encouraged to treat agriculture as a business.

1.4.5.20 Overview of Agricultural Sector Performance-Budget Monitoring and Accountability Unit (BMAU) in the MFPEd

The presentation was made by Ms. Rosette Nabbumba Nayenga. She said that the Budget Monitoring and Accountability Unit (BMAU) in the Ministry of Finance, Planning and Economic Development was a Government funded unit that sought to improve accountability and efficiency in public expenditure by conducting semi-annual and annual performance assessments of the implementation of selected government programs/projects. The areas of focus were Agriculture, Education, Energy, Health, ICT, Industrialization, Microfinance; Roads, Water and Sanitation and Public Sector Management. The unit assesses the extent to which the budgets, planned outputs and targets are executed as they relate to the sector objectives.

She highlighted on the assessment criteria and overall sector performance as detailed in the tables below.

Score	Comment	Qualifier
80% and above	Excellent	All set targets achieved and funds well utilized
70%-79%	Very good	Most of the set targets achieved and funds absorption is 70%-79%
60%-69%	Good	Some core set targets achieved and funds absorbed to 60%-69%
50-59%	Fair	Few targets achieved and funds absorption is 50%-59%
Less than 50%	Below average	No targets achieved and funds absorption is less than 50%

Financial Year	Rating
FY 2014/2015	Good (60% -69%)
FY 2013/2014	Good (60%-69%)
FY 2012/2013	Fair (50%-60%)

Notes on FY 2014/15:

- Excellent release and expenditure performance
- Some core targets were fully achieved but quality of service delivery remains poor in many programmes.
- All programmes had aspects that were both well and poorly implemented.

The presentation further highlighted on the performance of selected sub-sectors that included National Animal Genetic Resource Centre & Data Bank, Uganda Cotton Development Organisation, Agriculture Credit Facility, Rice Development Project, Fisheries Resources Department (Very Good performers (70%-79%)); NAADS/Operation Wealth Creation, Vegetable Oil Development Project, Crop Pest and Disease Control Project, Crop Protection Department (Good Performers (60%-69%)); Farm Development Department (Fair performers (50%-59%)). She also presented the Agricultural Credit Facility (ACF) beneficiaries by region and gender by 30th June 2015 and performance on the labour saving and mechanisation project.

Challenges

She highlighted on the challenges as follows:

Under the Programmes

- a) **ACF:** Discrepancies in amounts received by beneficiaries and as recorded at BoU. Higher by over 500m or lower by 52m; irregularities in application of loan terms by commercial banks; no framework to manage bad debts; lack of performance targets.
- b) **Crop Protection Department:** underperformance in delivery of outputs due to delays in resolving overlapping mandates with Crop Regulation and Certification Department.
- c) **Farm Development:** Slow roll out of programmes at LG level due to inadequate extension and funding; Poor supervision and maintenance of rehabilitated irrigation schemes due to delayed signing of management framework and performance contract by MAAIF.
- d) **Fisheries Resources Department:** Poor performance of aquaculture due to stalled works at Kajjansi Agricultural Development Research Centre.
- e) **Labour Saving Project:** Delayed completion of works due to inadequate equipment and delayed payment of salaries and allowances. Unjustifiably high fuel costs.
- f) **NAADS:** High gender inequality in access to inputs by women, PWDs, youth, elderly and poor people – limited access and ownership of land, transport means, funds to set up livestock shelters, political differences
- g) **NAGRC&DB:** Slow implementation of planned activities due to inadequate basic infrastructure (staff accommodation, water systems, paddocks, power) and equipment (transport means, tractors).
- h) **VODP2:** Underperformance of oilseeds component – late deliveries of inputs; failure of farmers to pay off loans under the PPP arrangements.

Under the Sector

- a) Wastage and poor quality of inputs and materials due to inadequate supervision and monitoring of beneficiaries, suppliers, distribution processes.
- b) Stalled projects due to low capacity of contractors, poor maintenance of equipment by MAAIF, inadequate funding.
- c) Low reach/absence of programmes in LGs due to inadequate extension services
- d) Gender and regional inequality in access to agriculture sector programmes; low access by vulnerable groups.
- e) Poor implementation of projects since Heads of Departments were not directly in charge of their budgets. Re-allocations are done between programmes.

Recommendations

- a) MAAIF, LGs expedite implementation of the single spine extension system and recruit the required staff.
- b) MAAIF, agencies and LGs strengthen quality assurance of inputs and enforcement of regulations governing movement of planting materials and livestock.
- c) MAAIF and LGs address constraints that hinder equitable access to programmes by women, elderly, youth and vulnerable groups and the North and East.
- d) MAAIF should strengthen technical evaluation of contractors
- e) MAAIF and MFPED should give IFMS user rights to Heads of Departments.

1.4.5.21 Markets and export oriented productions

The presentation was made by Mr. Elly Twineyo Kamugisha, the Executive Director, Uganda Export Promotion Board. His first statement was that the country was facing the challenge of the volatility of the Uganda shilling and raised a question whether as a country we had produced enough. He said that Market-oriented farming was driven by making profits through selling farm products in the market on a regular basis. A successful farmer would need to produce what the market wants and what satisfies the consumer. Traditional/subsistence farming was based on the use of simple technologies that were geared to both the production and consumption needs of the farm family. Farm decisions such as what to produce and what technologies to use were closely linked to household decisions such as what to eat and how to spend time.

He said that under the Market-led production, there was growing recognition that market-led diversification and enterprise development could broaden income opportunities and improve livelihoods for rural poor communities. Extension staff needed to make farmers aware about what to produce, when to produce, how much to produce, when and where to sell, at what price and in which form to sell their produce. Effective linkages of production systems with marketing, agro-processing, and other value added activities would play an increasingly important role in the diversification of agriculture. Production was informed by market requirements (seed/specie; production; post-harvest handling; trade, etc.); Development of market information systems; and Investment in critical market access and facilities. Market-oriented farming calls for farmers to be aware of the different market channels and input suppliers, the differences in prices and costs, and other conditions of buying and selling. The questions that a market-led producer needed to address were as follows:-

- a) How do you quickly find the most relevant and reliable information?
- b) Which products have a high demand in the market?
- c) What quality specifications do you need to ensure good prices for produce?
- d) How and when should you change the farm enterprise combination (e.g. diversifying from crop production)?
- e) How, when and where should you buy inputs or sell products?
- f) What technologies can be used profitably within resource constraints regarding land, capital, labour and knowledge?
- g) How can you better operate the new technologies and make optimal use of new inputs?

Basics of marketing: The traditional 4 Ps were: **Product**—core product; augmented product; **Price**—the consideration; **Place**—location; physical distribution (handling, transport, and storage) and **Promotion**—Advertising; direct marketing, sales promotion; merchandizing; personal selling; branding; PR.

Exporting: What can be exported included Goods, Services, Ideas and Culture.

Export oriented production: There was need for a deliberate market-led approach to production targeting specifically the export markets. An analysis of the requirements of each export market was necessary for the producers to meet what the market requires. There was need to continuously advise the producers on the changing market conditions (standards, quality, quantity, others).

The critical considerations that the sector should consider for market-led production and exporting were correct market information; developing a robust agricultural market information system; Right seed and production procedures; Post harvest handling and; Investment in critical access to marketing infrastructure facilities (e.g. storage, cold store, packing sheds, and other post-harvest facilities) necessary to meet the sanitary/quality standards of export markets.

The information you need about the export market before you produce for export: Quality and standards – SPS requirements; Taxes; Regulations; Documents (certificate of origin; SPS certificate; packing list; etc.) depending on the importing country and the type of product. Is there market access negotiated under WTO or any bilateral? Is it quota-free and duty-free market access?

Information & the value chain

Input dealers (farm inputs)	Quality inputs?
Farmers	Correct agri-husbandry? Post-harvest handling?
Traders/aggregators	Price vs. quality relationship?
Transporters	Right handling and vehicle?
Processors	Quality? Standards?
Marketing (local consumption, export)	Where is the market? Quality? Standards?

Where are the export markets?



Top Ten Export Destinations, 2014 (US\$ million)

Country	Value (US\$ million)	Main Products
Kenya	347.3	Tea, tobacco, dairy products
South Sudan	283.9	Oil products, beer, sugar, vegetable oils
Rwanda	189.3	Iron/steel products, confectionery, cosmetics
DR Congo	183.4	Cereals
UAE	140.4	Fish fillets, fruits and vegetables
Sudan	103.7	Coffee, tea
The Netherlands	85.2	Flowers, fruits and vegetables, fish
China	66.3	Hides/Skins, oil seeds, plastic scrap
Tanzania	56.0	Iron/steel, re-exports
Burundi	51.0	Cement, iron/steel, animal/vegetable oils and fats

Importance of Regional Markets: The regional market was Uganda's number one export destinations (US\$1.22 billion in 2014, at 54%); EU was number two US\$527.4 million – at 23%. Why Regional Markets? It was due to Market familiarity; Proximity; Growing demand; Less stringent standard requirements and; Buying value added/ manufactured products.

Informal Exports by destination, product and values (USD Million)

Country	2010	2011	2012	2013	2014	Products
DR Congo	143.18	126.13	157.91	135.01	139.46	Fish, beans & sugar
Kenya	94.07	69.46	79.95	69.69	92.89	Maize, beans, and sugar
Rwanda	32.88	35.07	38.10	27.85	24.55	Bananas, maize, and sorghum
South Sudan	196.90	83.72	115.06	130.81	119.47	Maize, beans, industrial products
Tanzania	53.32	28.85	47.46	42.77	23.27	Maize, beans, and bananas

Export Overview– 2014: In 2014, Uganda's total merchandise exports contracted by negative 5.96% from US\$ 2.82 billion in 2013 to US\$ 2.65 billion in 2014. While merchandise imports into Uganda reached US\$ 5.066 billion in 2014. Trade deficit reached US\$ 2,406 billion in 2014.

Remittances were US\$910 million in 2012; around U\$ 1.0 Billion in 2013; and U\$ 800million in 2014.

Role of Government in export development & promotion

- a) Undertake research, to support production, guided by the market requirements
- b) Enabling environment (laws, policies, regulations, strategies, stable government, infrastructure, etc.)
- c) To provide trade and market information services
- d) To provide advisory services in areas of production and marketing
- e) To provide trade promotional services (fairs, exhibitions, buyer-seller missions, etc.)

Role of private sector in export development and promotion

- a) Produce for the market and trade
- b) Seek market information (UEPB promises to give export market info on a regular basis)
- c) Adoption of modern varieties and fertilizers plays an important role in securing higher yields
- d) Lobby Gov't for enabling environment

Things to note about exporting

- a) Companies are in business to make profits.
- b) Government wants businesses to be good citizens & pay taxes.
- c) It's the role of Government to create an enabling environment (GoU has been doing this).
- d) Regional markets offer more potential for Uganda value added/manufactured products.
- e) There is a lot of cross-border trade (part of it is informal); yet exports are zero rated.
- f) Exports (volume and values) influenced by supply side (do we have quality & quantity?) and market/ demand side (market sizeable? Entry requirements).

Things to note about export market development efforts

- a) Most Ugandan exporters are SMEs who need export market information and advice
- b) Exporting (a process) is different from importing (just pay for what you see and bring it here)
- c) Exporting is still not appreciated by most MDAs
- d) There is lack of coordination among MDAs on export development and promotion
- e) We are producing not guided by market requirements both in the domestic and export markets

Why the need to export?

- a) Market diversification (increases total company sales)
- b) Declining domestic market for your products (product is at decline stage on PLC)
- c) Earn forex
- d) More demand/markets put more pressure on the company to produce more.
- e) More raw materials bought more income for producers
- f) Contribute more to GDP (buy additional raw materials, pay taxes, employ more, etc.)

Functions of UEPB are to:

- a) Provide trade and market information services
- b) Promote the development of exports including:
 - o Provision of hands-on technical advice in production and
 - o Post-harvest handling of exports;
 - o test-marketing new export commodities and products;
- c) Provide trade promotional services
- d) Provide customized advisory services in various areas
- e) Formulate and recommend to the GoU export plans, policies and strategies designed to provide efficient, adequate and coordinated measures for promotion of Uganda exports.

1.4.5.22 Group Work

The Facilitator divided the participants into 4 groups, based on thematic areas.

The task for each of the groups to identify the key issues that needed special attention and make recommendations

The thematic areas were as follows

1. Research & Extension,
2. Marketing and Agro Processing;
3. Financial Services and;
4. Promoting Youth Involvement in Agriculture.

The group presentations were as follows:

a. Group 1: Research & Extension

Issue	Recommendation
Supply of poor quality inputs	<ul style="list-style-type: none"> ➤ Input suppliers should be registered and certified ➤ Strengthen the Inspection arm of MAAIF and other regulatory bodies ➤ Support production and multiplication of foundation seed
Single spine Ext system Staffing Facilitation (finance and equipment) Capacity	<ul style="list-style-type: none"> ➤ Need for an Ext policy and strategy; Open up the process and involve all stakeholders in this process ➤ Recruit, finance and re-tool
Inadequate and timely funding to research	<ul style="list-style-type: none"> ➤ Increase investment in research and timely release of funds
Climate change adaptation	<ul style="list-style-type: none"> ➤ Drought tolerant varieties ➤ Water harvesting and irrigation facilities ➤ Soil moisture conservation technologies (shed tree, etc) ➤ Harnessing other energy sources e.g renewable energy ➤ Integrating bee keeping in our agriculture systems
Coordination	<ul style="list-style-type: none"> ➤ Establish a mechanism to coordinate all stakeholder engaged in agriculture sector ➤ Strengthen research-extension farmer linkages
Data for decision making	<ul style="list-style-type: none"> ➤ Strengthen MIS at MAAIF and LG ➤ Routine Agriculture census

b. Group 2: Marketing and Agro Processing

Key issues in marketing

KEY ISSUES	ACTORS
Quality assurance – a long whole value chain	Farmers, extension workers, MAAIF, FO, traders-middle man
Regulatory services to promote competitiveness in the market	MAAIF, UNBS, POLICE
Infrastructure	MAAIF, UNRA, Ministry of Trade & Tourism
Post harvest losses	MAAIF, CSO, NGO, COOPERATIVES
Market information systems –among stakeholders	MAAIF, CSO, FARMERS, TRADERS
Delivery of appropriate technologies to meet market requirement	MAAIF, NARO, NAGRIC & DB
Market driven production	FARMERS, TRADERS, MAAIF
Market research /dynamics	NARO, MAAIF, CSOs
Development of product standards	MAAIF, UNBS, NDA, BoU, Ministry of Trade & Tourism
Market development & strengthening (national , regional and international) & stakeholder coordination	BoU, MAAIF, CSO
Investment in price control-storage	MAAIF, BoU
Cooperatives	MAAIF, CSO
Control of crop-animal pests and diseases	MAAIF

Key recommendations in marketing

- a) Continuous market research
- b) Market infrastructure development
- c) Formation and strengthening of cooperatives
- d) Establishment of MIS

Key issues in Processing

KEY ISSUES	ACTORS
Value addition	MAAIF, CSO, TRADERS, MANUFACTORS
Build capacity in good manufacturing practices	MAAIF
Reduction in cost of agro processing	MAAIF
PPP in agro processing and segregation of responsibility along the value chain	ALL STAKEHOLDERS
functionality of agro processing machinery	MAAIF
promotion of sustainable businesses	MAAIF, CSO, BoU, Ministry of Trade & Tourism

Recommendations for Agro processing

- a) Strengthen cooperatives
- b) Rural electrifications
- c) Contract farming

- d) Minimize cost of production and business
- e) Finance/ credit services
- f) Improve infrastructure

c. Group3: Financial Services

Issue	Recommendation
High the interest rates	Reduce interest rates on agriculture loans
ACF is mingled with other loan products within commercial banks facilities which bank	<input type="checkbox"/> Streamline the ACF loan facility and dissemination information to farmers, <input type="checkbox"/> BOU Uganda to monitor access to ACF loans by farmers <input type="checkbox"/> Institute a monitoring units at an ACF monitoring units at different levels, LG, MAAIF, Farmers, MOFPED, BOU,
Lack of Legislation or a policy on agricultural financing	Quicken agricultural finance policy processes and make it active as well as share information with farmers
Lack of Collateral security for women, youth and peasant farmers	Need to come up with group loan scheme for women and youth who may not have collateral
Heavy taxes	Give tax incentives
Inadequate Information about ACF among farmers	<input type="checkbox"/> Publicize ACF, <input type="checkbox"/> Bank of Uganda discuss with Directors of commercial banks <input type="checkbox"/> Government should provide sufficient funds to subsidize ACF partner banks
perceived risk on agricultural finance	Promote agricultural insurance and guarantee schemes
Poor handling of agriculture loan Micro finance support centre	Put the micro support centre back on track and advise them to reduce interest on agricultural loans
Mechanisation	Promote access to tractor facilities

d. Group 4:Promoting youth involvement in Agriculture

Key issue

- a) Enterprise selection based on zoning –YOUTH AND WOMEN
- b) Create and enhance co-operative groups for women and youth.
- c) Learning Platforms For YOUTH and WOMEN
- d) Priority investment that favor youth e.g. vegetables instead of coffee
- e) Follow up on sponsored students in the field on agriculture

Recommendations

- a) Women and youth empowerment to access projects like OWC through gender tools like GALS methodologies that involve vision and drawing a road map. With a given percentage known to belong to women and youth from the initial stage (60%)
- b) Agricultural insurance to limit on the risks involved in the sector
- c) Capacity building for skill development e.g. enterprise selection, leadership and finance literacy
- d) Need for incubation centers at sub county or district level
- e) Base line survey capturing basic needs for the group to inform investment
- f) A need for an agricultural desk at different center s e.g. MAAIF particularly for the youth and women
- g) Promotion of cost sharing among the youth to create ownership of projects by the youth
- h) Youth friendly information plat forms using the existing software.
- i) Increase productivity of agriculture sector through quality assurance ,access to quality inputs

- j) Recruitment of qualified youth to work as extension in local government.
- k) Enhancing the existing youth centers e.g. the one in Kabarole District in the field of Agriculture
- l) Access to agricultural financing that are user friendly to both women and youth who in most cases have no land titles

1.4.5.23 Closing Remarks

Remarks by Permanent Secretary, Mr. Vincent Rubarema

The Permanent Secretary, in his closing remarks said MAAIF was proud of the partnership established. He thanked all the participants for the good work done and the task undertaken during the JASAR 2015. He said MAAIF had worked with CSOs in the previous JASARs but this time, it had expanded the level of participation. He committed that more discussions will be undertaken in line with the recommendations and ensure that they feed into the sector priorities and budget in the midterm & long term. He promised to share the report of the workshop with the participants and to provide an update on the status of implementation of the recommendations in JASAR 2016. He thanked the FAO Resident Representative for accepting to preside over the closing ceremony and for being a strong partner in the agriculture sector. He concluded by wishing all sector players well. He then invited the FAO Resident Representative to give his closing remarks.

Remarks by FAO Resident Representative

His Excellency Alhaji Jallow said that it was a great pleasure for him to participate at the closing ceremony of the 5th Joint Agricultural Sector Annual Review. He said that the deliberations among stakeholders had moved a notch higher, with a clear benefit of a forum bringing together the different stakeholders. He appreciated that the discussions were frank and expressed the desire by all stakeholders to improve the performance of the sector thereby ensuring a commercialized agriculture sector for wealth creation.

He noted that the objective of the workshop had been achieved and areas that needed further interventions were highlighted, including animal genetics, promotion of mechanization, capacity building of Local Governments, more work under post-harvest handling and value chain development; inter and intra-sectoral information sharing and matters of trade.

He said the participants were able to note with appreciation the performance of a number of sector outcome indicators, especially those relating to commodity production and exports and the good progress in a number of actions that were agreed at last year's JASAR. He said many of the agreed actions were achieved though challenges still remained in some areas, which Government and partners, had committed to address appropriately in the short term.

He re-echoed that this 5th JASAR Workshop highlighted important elements that were needed for continuing to improve the sector performance and these were as follows:-

- a) Maintain and strengthen open, frank, and transparent dialogue, at all levels, including greater emphasis on strategic and cross-cutting issues. He said our focus was on the enormous opportunities for expanding scope for the participation of the private sector,

civil society and media actors. The Agriculture Sector Working Group had undertaken to meet more frequently and strengthen information dissemination relating to opportunities, and market indicators in the agriculture sector, in line with the Communication and Knowledge Management Strategy; under the Ministry (MAAIF).

- b) Follow up with Local Governments to ensure recruitment of extension service providers in line with the single spine extension system and ensure the retooling of District Local Governments for their effective and efficient operation.
- c) The Directorate of Agriculture Extension Services would be strengthened to improve monitoring, mentoring, and supervision of agricultural services in local governments.
- d) The important roles of inter and intra sectoral coordination which would enable us to benefit from synergies in the sector. There was need to further engage and partner with sector stakeholders to benefit from synergies that exist, which will enable all to achieve efficient implementation of sector plans and investments.
- e) Assurances that the recommendations of this workshop would be further developed into an action plan which would be shared with all stakeholders.

He concluded by wishing all the best declared the workshop officially closed

CHAPTER TWO: OVERALL SECTOR PERFORMANCE

2.1 Budget Performance

Table 1: Overview of Sector Budget Performance 2014/15

Budget Classification		Annual Approved Budget 2014/15 in UGX Bn.	Releases by June 2014 in UGX Bn	Expenditure by June 2014 in UGX Bn	Outturn (Releases against approved budget)%	Absorption (Expenditure against releases). %	Releases against spent %
Recurrent	Wage	55.400	30.337	29.441	54.8	53.1	97.0
	Non-Wage	65.711	49.277	48.828	75.0	74.3	99.1
Development	GoU	223.442	235.233	232.673	105.3	104.1	98.9
	Donor	129.283	94.805	81.062	73.3	62.7	85.5
Total GoU		344.553	314.847	310.943	91.4	90.2	98.8
Total GoU+ Donor (MTEF)		473.835	409.653	392.005	86.5	82.7	95.7
Arrears and Taxes	Arrears	0.001	0.000	0.000	0.0	0.0	NA
	Taxes	5.213	2.623	2.616	50.3	50.2	99.7
Total Budget		479.049	412.276	394.621	86.1	82.4	95.7
NTR		20.744	39.285	34.595	141.6	124.7	88.1
Grand Total		506.793	451.561	429.216	89.1	84.7	95.1
Excluding Taxes and Arrears		501.580	448.938	426.600	89.5	85.1	95.0

Table 2: Agriculture Sector GOU Budget Performance by Vote Function FY 2014/15 in UGX bn (Excluding taxes, Non tax revenue and arrears)

Vote Function	Approved Budget UGX Bn	Released UGX Bn	Expenditure UGX Bn	% budget released	% of budget spent	% of releases spent
VF: 0101 Crops	24.04	30.96	30.91	128.8	128.6	99.8
VF: 0102 Animals	20.83	41.63	41.51	199.8	199	99.7
VF: 0149 Policy, Planning, Support Services	18.99	18.74	18.21	98.7	95.8	97.2
Total for Votes	63.86	91.33	90.63	143.0	141.9	99.2
VF: 0155 Dairy Development	5.04	4.51	3.95	89.4%	78.4	87.6
VF 0105 Urban Commercial and Production services	1.36	8.28	8.26	610.4	609.0	99.8
VF 0156 Breeding and genetic development	3.45	3.88	3.75	112.4	108.8	96.7
VF: 0151 Agricultural Research	36.87	36.72	36.72	99.6	99.6	100
VF: 0154 Agriculture	159.93	159.47	156.97	99.7	98.1	98.4

Vote Function	Approved Budget UGX Bn	Released UGX Bn	Expenditure UGX Bn	% budget released	% of budget spent	% of releases spent
Advisory Services						
VF: 0152 Cotton Development	3.59	3.20	3.20	89.3	89.3	100.0
VF: 0153 Coffee Development	7.91	7.46	7.46	94.3	94.3	99.9
Grand Total	473.835	409.653	392.005	91	82.8	95.7

The agriculture sector's approved budget for the FY 2014/15 was UGX 473.835 excluding taxes, arrears and Non-Tax Revenues (NTR). By the end of June 2015, UGX 409.653 or 91% had been released of which UGX 392.005 or 95.7% was spent on activities by various institutions and reflected commendable performance when compared to FY 2013/14 figures of UGX 396 and 96.9%. It was also strong demonstration of increasing capacity of MAAIF and its Agencies to absorb resources for activity implementation. In specific instances, excess releases against approved budgets were created by supplementary releases for the following vote functions:-

1. The Crop Vote Function received supplementary funding for the purchase of land for creation of an oil palm nucleus estate in Buvuma District in accordance with the Memorandum of Understanding (MoU) between GoU, IFAD and BIDCO under the VODP 2 Project;
2. The Animal Vote Function received supplementary funding to cater for settling outstanding obligations and acquisition of civil works certificates for construction of livestock and fisheries market and water infrastructure;
3. NAGRC & DB obtained supplementary funding to meet the funding gap in its wayer bill and also cater for animal restocking activities.

2.2 Trends and Progress Measured Against NDP Indicators

2.2.1 Economic Overview

Many factors influence the performance, or are influenced by the performance of the agriculture sector. This section reviews the country's economic performance in terms of growth, inflation and exchange rate and their relationship to sector performance in FY 2014/15.

a) Economic Growth

In his budget speech in June 2015, the Minister of Finance Planning and Economic Development mentioned that the overall performance of the economy as measured by real GDP at market prices was estimated to have grown from 4.5% in FY 2013/14 to 5.3% for FY 2014/15. The budget speech attributed this growth to several factors. These included:

- a) A continued recovery in agricultural production, from 1.5% to 2.3%, mainly driven by growth in cash crops production;
- b) Strong manufacturing and construction sector principally on account of infrastructure investment, and
- c) Increase in ICT and trade contributing to the services sector growth.

b) Inflation

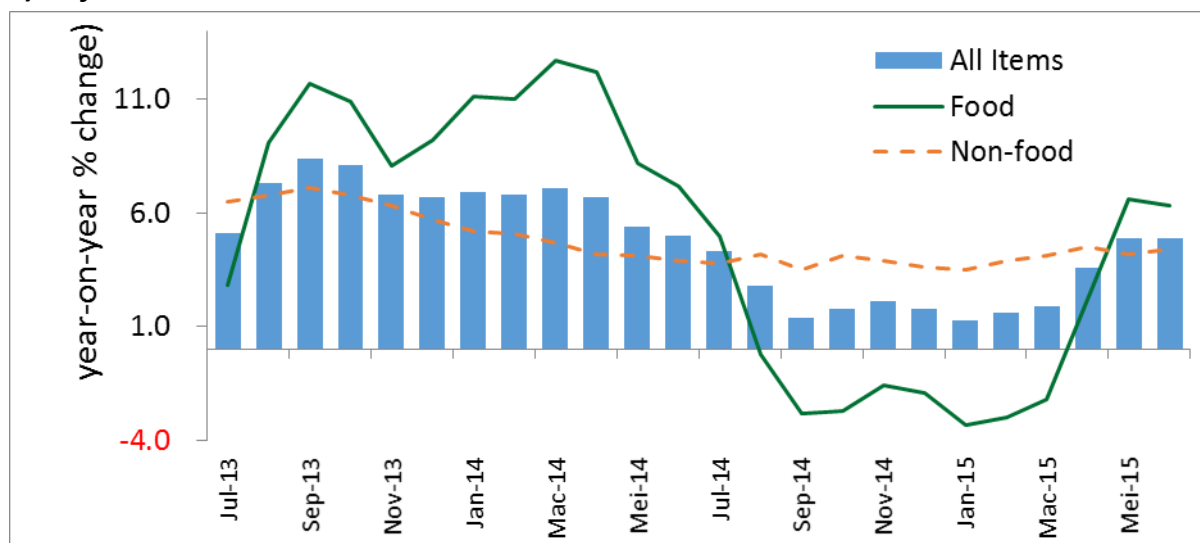


Figure 1 depicts the year-on-year changes in inflation for food items and non-food items and how they contributed to headline inflation (All Items) since July 2013. Food items include food crop items such as maize, beans, cassava, matooke (bananas), millet, etc. and non-food crop items such as meat, dairy products, processed food etc. Non-food items include utilities, fuel, clothing, footwear, beverages, transport, etc.

In FY 2014/15, headline inflation was generally stable, averaging 2.7% as compared to an average of 6.7% in FY 2013/14. According to the Background to the Budget 2015/16, this was due to generally low food inflation, low global inflation and falling oil prices. The average food inflation was 0.2% in FY 2014/15 as compared to 9.5% in FY 2013/14. The drop in food inflation in the first half of the year was due to bumper harvests in most parts of the country. However, since February 2015, headline inflation has been rising and this is attributed to a rebound in prices of food crops, oil and other commodities, and the depreciation of the Uganda shilling against the US Dollar.

Figure 1: Food and Non Food Items Inflation

Source UBOS 2014

c) Exchange Rate

During FY 2014/15, the Uganda shilling depreciated by about 20% against the US Dollar, from an official mid-rate of UGX 2,681 in July 2014 to about UGX 3,200 in June 2015. A weaker shilling would normally stimulate economic activity, and, farmers would enjoy higher commodity and export prices. But Uganda's agricultural exports are mainly in raw form, and primary goods do not command a high price in the international market. Hence there is not much room for the agricultural sector to exploit. The agriculture sector also faces supply side structural bottlenecks and commodity supplies do not respond quickly to take advantage of such export opportunities. In addition, civil strife in South Sudan—Uganda's leading export destination—will continue to affect 20 percent of Uganda's exports.

2.3 Trends and Progress Measured Against DSIP Outcome Indicators 2014/15 and 2010/11-2014/15

2.3.1 Agriculture Sector Strategic Outcomes

The DSIP contributes to 2 development outcomes and has 4 strategic outcomes. The development outcomes are:-

1. Increased household incomes and livelihoods, and
2. Improved food security and nutrition

The strategic outcomes are:-

Outcome 1: Improved agricultural production and productivity

Outcome 2: Improved market access and increase in value addition

Outcome 3: enabling environment and institutional strengthening

What follows is an overview of the progress that has been made.

A: Sector Contribution to Household Incomes and Food Security

The agriculture sector, together with other sectors and institutions, both public and private, contribute to the agriculture and food security related outcomes. The DSIP indicators on household income and food security outcomes are:-

- i. Percentage of the rural population living below the national poverty line
- ii. Percentage of children below the age of 5 years who are stunted
- iii. Percentage of households taking only one meal a day

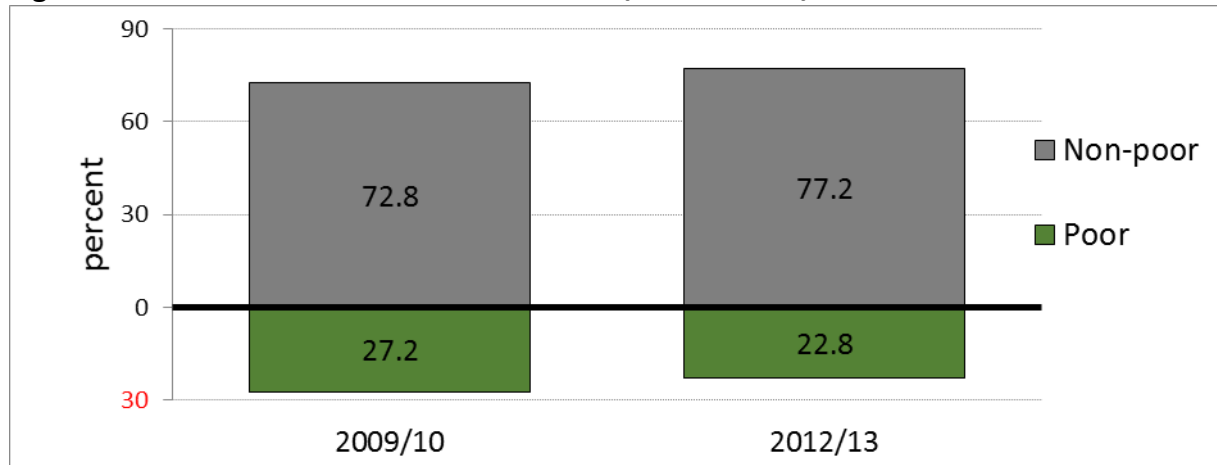
Data on these and other related outcomes are available from periodic surveys like the Uganda National Household Surveys (UNHS) and the Uganda Demographic and Health Surveys (UDHS). The UNHS reports for 2009/10 and 2012/13, and the UDHS report for 2011 provide current information on these indicators. These indicators were used to provide a proximate current status.

Incomes and Livelihoods

Incomes

The share of the total population with agriculture as the primary source of income remained the same at 42% in 2009/10 and 2012/13. Among the poor, agriculture was the primary source of income for 55% in 2012/13, after declining from 58% in 2009/10. Progress has been made in reducing poverty in rural areas. The proportion of the population of the rural poor (living below the national poverty line) fell from 24.5 in 2009/10 to 19.7 in 2012/13 according to the Poverty Status Report 2014. (Figure 2). This represents an additional one million people in rural areas that came out of poverty.

Figure 2: The Rural Poor and Non-Poor in 2009/10 and 2012/13



Source: UBOS 2010, 2013

Employment

About 72% (or about 10 million) of the working population is engaged in agriculture, of whom 77% are women and 63% are youth (UBOS 2013). This is an indication that agriculture remains the main source of income and livelihoods the majority of the working population, especially those in the rural areas. Wage jobs in agriculture grew by 14% from 1.35 million in 2009/10 to 2.0 million in 2012/13. The corresponding number of wage jobs in non-agriculture declined by 3%. However casual wage jobs in agriculture grew faster (20%) than regular jobs (10%)

B. Food security

Table 3 shows that food availability is generally not a limiting factor in most regions of Uganda but it is food access and utilization are major limiting factors (IPC, 2015). Previous IPC reports indicated that in any one year, over 80% of the population is food secure.

Table 3: Limiting Factors and Underlying Factors Affecting Food Security

Region	Food security limiting factors			
	Food availability	Food Access	Food Utilization	Main underlying causes
Central 1 Central 2				High prevalence of pests and diseases; low incomes; urbanization; poor extension; lack of bylaws on food production and storage
Northern South Western Western Eastern East Central West Nile				Poor extension; depletion of natural resources; lack of post-harvest facilities; poor road infrastructure; weak enforcement of polices and legislation
Karamoja				Poverty, illiteracy, inadequate health, sanitation and water facilities; poor road and market infrastructure; frequent droughts and dry spells, unstable and low value livelihood strategies; low production and productivity

Source: IPC (2015): Report of the Integrated Food Security Phase Classification Chronic Analysis for Uganda. Prepared by the Uganda IPC Technical Working Group. Kampala Uganda

Key

	Not a limiting factor
	Minor limiting factor
	Major limiting factor

Frequent dry spells are largely responsible for limiting food availability in Karamoja, East Central and West Nile. Low food access and utilization were attributed to such issues as poverty, storage, inadequate nutritional awareness, cultural food preferences, poor sanitation, food preparation practices and food wastage, but varied according to regions.

Meals per day

Many Ugandans still take one meal a day. UNHS results (UBOS 2013) indicated that, in 2012/13, about 9% of the households were taking one meal a day. This was especially so in rural areas where the proportion was 9.8% as compared to 6.2% in urban areas. The situation was worse among the poor (23.6%) and in Karamoja (58.5%). There was almost no change from the 2009/10 level.

Nutritional status

Data from the UDHS (UBOS 2011) show that in 2011, underweight (low weight for age) among children below 5 years was 14%. Stunting, which gives an indication of chronic malnutrition due to inadequate food or recurrent illness, was 33% and wasting was 5%. The Uganda National Action Plan targeted to reduce underweight and stunting to 10% and 32% respectively. When compared to the World Health Organization (WHO) internationally

accepted thresholds (WHO and UNICEF 2009), Uganda's current nutrition status is poor or serious (Table 4).

Table 4: Children's Nutritional Status in 2011 Compared with WHO Child Growth Benchmarks (Shaded Cells Show Ranges in which Uganda's Indicators Lie)

	Acceptable	Poor	Serious	Critical
Stunting	< 20%	20-30%	30-40%	> 40%
Wasting	< 5%	5-10%	10-15%	> 15%
Underweight	< 10%	10-20%	20-30%	> 30%

Source of data: UBOS and ICF (2012); child growth standards from WHO and UNICEF (2009).

Given the contribution of several sectors and institutions to improvements in household incomes and food security, it is difficult to tease out the specific contribution to these improvements by the agriculture sector. It is, however, reasonable to conclude that the many reforms in the sector over the period of the 2000s and the DSIP period contributed to improvements in food security outcomes.

C. Sector Strategic Outcomes

As already indicated above, sector outcomes are: (a) improved agricultural production and productivity; (b) improved market access and increase in value addition, and (c) an enabling environment and institutional strengthening

Outcome 1: Improvement in agricultural output and productivity

The agriculture sector is projected to have grown by 2.3% in FY 2014/15 from 1.5% in FY 2013/14. This trend also shows a steady rebound in the sector growth from FY 2011/12 (Table...). As already mentioned above, the sector recovery was due to favorable weather conditions and a recovery in cash crops subsector.

Table 5: Progress in Achieving Sector Growth Targets

Growth Indicator	2009/10	Target 2014/15	2013/14	2014/15	Average 2010/11–2014/15
Agricultural output, %	3.2	5.7	1.5	2.3	1.9
.	13.6	5.3	-0.6	6.6	2.6
Food crops, %	5.2	4.8	0.8	0.9	0.3
Livestock, %	2.3	5.5	2.8	2.8	2.5
Fishing, %	2.8	7.1	3.6	1.9	0.6
Forestry, %	6.9	6.0	4.8	4.6	7.0

Source: Targets from NDP1; annual growth rates from Background to the Budget 2015/16

However, apart from cash crops, the growth targets for agricultural GDP and sub-sectors set in NDP1 have been missed. The medium term average growth rates are also below the baseline (2009/10) growth rates.

Food crop production

Data indicates that production of major food crops increased from 14,150 million kg in 2009 to 14,600 million kg in 2014, representing an average annual increase of 1.4%. The area planted increased from 5.1 million ha to 5.8 million ha, which averages to an annual increase of 2.0%. This implies that expansion in food production was mainly as a result of area expansion rather than productivity improvements.

Food crop groups (plantains, cereals, roots and tubers, pulses and oil crops) exhibited the following characteristics:-

- There was an increase in area planted between 2013 and 2014 but in terms of output, only plantains, cereals and oilseeds exhibited expansion. Output of root crops and pulses declined;
- All of them exhibited an expansion in area and output 2014 (index > 100) when compared to 2009, except for root crops and pulses. The oilseeds have had a larger expansion in area and production.

In terms of individual crops:-

- There was either a positive or no change in area planted between 2013 and 2014
- Rice and Irish potatoes had the highest growth rates between 2013 and 2014, and beans and cassava had negative growth rates
- There was an upward trend in output and area planted of almost all the crops between 2009 and 2014 (indicated by an index > 100), except for groundnuts and sesame whose output increased despite a fall in area planted.

Table 6: Production & Area Changes of Selected Crops

Crop	% change (Area)	% change (Output)	Area Index	Output Index
	2013-14	2013-14	2014/2009	2014/2009
Plantains	0.2	4.7	103	101
Cereals	0.3	1.4	113	111
Root crops	0.2	-2.0	106	96
Pulses	0.3	- 7.4	106	95
Oil crops	1.0	1.2	473	172
Maize	0.4	0.6	117	117
Rice	2.2	10.9	110	115
Beans	0.3	- 6.9	109	95
Cassava	0.1	-5.6	110	95
Irish Potatoes	-	7.7	111	117
Sweet potatoes	0.2	2.9	98	96
Groundnuts	-	0.1	114	115
Sesame	-	0.1	108	108

Source: Area and Production data from MAAIF 2015

The DSIP highlighted boosting crop yields as the preferred solution to increase agricultural production rather than clearing more land. Data on yield trends for individual crops is scanty. However, data on current yields are far below what is achievable.

Table 7: Current and Projected Yields

Commodity	Yield (kg/ha) as at 2012/13	Projected yield (kg/ha) in 2017/18
Rice	2,400	4,000
Maize	1,400-1,500	5,000
Beans	1,400	2,500
Bananas (kg/ha/year)	3,200	33,000
Cassava	8,000-12,000	80,000

Source: FIPs MAAIF 2015

Cash Crop Production

The prioritized cash crops are coffee, tea, cotton, cocoa and oil palm. Procurement data for coffee and tea are used to proximate production.

Table 8: Changes in Production between 2013/14 and 2014/15 and the Production Index

Crop	2008/09	2013/14	2014/15	% change 2013/14 and 2014/15	2014-15 / 2008-09 Index
Coffee (MT)	202,606	225,905	198,000	-12.3	98
Tea (MT)	42,298	61,001	65,900	8.0	126
Cotton (185 kg bales)	125,300	78,364	93,093	18.9	74.3
Cocoa (MT)	-	22,010	24,008	9.1	-
Oil palm (MT of FFBs)	-	10,926	14,559	33.3	-

Source: MAAIF 2015

Table 8 shows the changes in production between 2013/14 and 2014/15 and the production index.

Production increased for all the 4 commodities between 2013/14 and 2014/15, except for coffee. Apart from cotton and coffee where production declined in the medium term (Index < 100), the rest of the commodities displayed an upward trend. Contributory factors to better performance in the short term (2014/15) and in the medium term (2010-2015) are summarized as follows.

Table 9: Commodities and Contributory factors

Commodity	Contributory factors
Coffee	In 2014/15, coffee production declined. In the medium term (2010-15) there have been new yields resulting from the replanting campaign especially for Robusta; research and development to produce coffee wilt disease resistant varieties; mobilizing farmers to plant high yielding coffee wilt resistant seedlings in traditional and non-traditional coffee areas; supporting the multiplication of these varieties and control of coffee wilt disease and other pests and diseases. Increased production. The challenges have been low farmer-extension staff ratio (29 staff for 89 districts) and limited adaptation to

Commodity	Contributory factors
	weather changes-leading to low yields, poor quality, prevalence of pests and diseases and low survival rates of seedlings planted.
Cotton	Cotton production fluctuates significantly in response to weather and international market prices. For example, the decline in production in 2013 and 2014 period was due to drought that was experienced during July and erratic rains in August 2014 (the cotton planting window) which affected planting. Declining soil fertility and limited use of fertilizers by farmers also explain low production. However government has undertaken intensive farmer mobilization and demonstrations, and support to farmers in form of subsidized inputs, ox-ploughs and tractor hire services and free cotton-targeted extension services.
Tea	Favorable weather conditions in 2014/15 and coming into production of tea planted over the last 3 years contributed to increased production. The Ministry and NAADS Secretariat continued to distribute free tea seedlings to farmers in traditional and new areas and improved tea clone nurseries were raised at Rwebitaba ZARDI to produce and supply nursery operators.
Cocoa	Cocoa planted in the last 3 years has come into production thus contributing to increased production; government procurement and distribution of seedlings ; demand for seedlings high because of good farm gate price for the product
Oil palm	The reduction in rain fall at the beginning of 2014 contributed to the decline in crude palm oil production but the production improved in FY 2014/15 due to adequate rains; but general increase in production in the medium term has been due to loans given to oil palm small holder farmers by government to establish and maintain their gardens and the presence of a guaranteed market from the processing factory; government is acquiring more land for oil palm

Livestock Production

Table 10 shows that there was a remarkable increase in the population of livestock national herd basing on the livestock census estimates of 2008. The index for all the types of livestock and breeds was over 100.

However, over 90% of cattle and poultry populations are indigenous breeds. NAGRIC has made tremendous progress towards livestock breed improvements. Some of the achievements since 2010 include:-

- a) It has used operational public farms and ranches (e.g. Mbarara Stock Farm, Rubona) to undertake its cattle breeding programmes;
- b) Maruzi and Aswa ranches have been rehabilitated and restocked with over 500 breedable animals each to serve livestock farmers with good breeds and artificial insemination material especially in the Northern Uganda;

Table 10: Livestock Population 2010-2014 (Million)

Species	Breed type	2008	2010	2011	2012	2013	2014	2014/2008 Index
Population of cattle	TOTAL	11.41	12.10	12.49	12.81	13.19	13.58	119
	<i>Indigenous</i>	<i>10.68</i>	<i>11.29</i>	<i>11.63</i>	<i>11.93</i>	<i>12.29</i>	<i>12.66</i>	<i>229</i>
	<i>Exotic</i>	<i>0.73</i>	<i>0.81</i>	<i>0.86</i>	<i>0.88</i>	<i>0.90</i>	<i>0.92</i>	<i>126</i>
Population of goats		12.45	13.21	13.60	15.05	15.80	16.59	133
Population of sheep		3.41	3.62	3.73	3.98	4.14	4.30	126
Population of pigs		3.18	3.37	3.92	3.74	3.89	4.04	127
Population of poultry	TOTAL	37.44	43.20	47.52	52.27	56.77	61.66	165
	<i>Indigenous</i>	<i>34.93</i>	<i>40.35</i>	<i>44.38</i>	<i>48.82</i>	<i>53.21</i>	<i>58.00</i>	<i>166</i>
	<i>Exotic</i>	<i>2.47</i>	<i>2.85</i>	<i>3.14</i>	<i>3.45</i>	<i>3.55</i>	<i>3.66</i>	<i>127</i>

Source: National Livestock Census for 2008 figures and Statistical Abstract

- c) In collaboration with certified breeders, NAGRIC has produced over 15,000 heifers to support the national cattle restocking programme. Artificial insemination has also been stepped up by rehabilitating the nitrogen plant, availing farmers with semen and training and equipping inseminators in most districts. Over 8,000 farmers in 36 districts have also been trained in pasture establishment and management, feed conservation and utilization, management of paddocks and zero grazing units;
- d) Over one million Kuroiler chicken have been produced and sold to over 3,000 farmers in 90 districts; over 500 Mubende goats and over 165 Boer goats have been produced and extended to over 30 farmers in 38 districts.

These and other efforts will further increase the population of improved breeds. Besides genetic improvement, the sector has improved livestock husbandry and control of disease and vectors. The capacities for disease surveillance, investigation and control at national and local government levels have been strengthened. The private sector has also established a vaccine production plant and a veterinary drugs factory to supplement the imported vaccines. Tsetse monitoring, detection and control, animal screening and treatment were carried out in areas that are infected with tsetse flies.

The challenges in the livestock sector include: a weak extension system; inadequate staffing levels in local governments and weak linkage between extension and research. The livestock sector also faces challenges in the post-harvest handling and processing sub-sector.

Milk

MAAIF estimates that milk production increased by 1.4% from 1.93 billion liters in 2013 and 1.96 billion in 2014. Figure... shows the trend in milk production between 2010 and 2014.

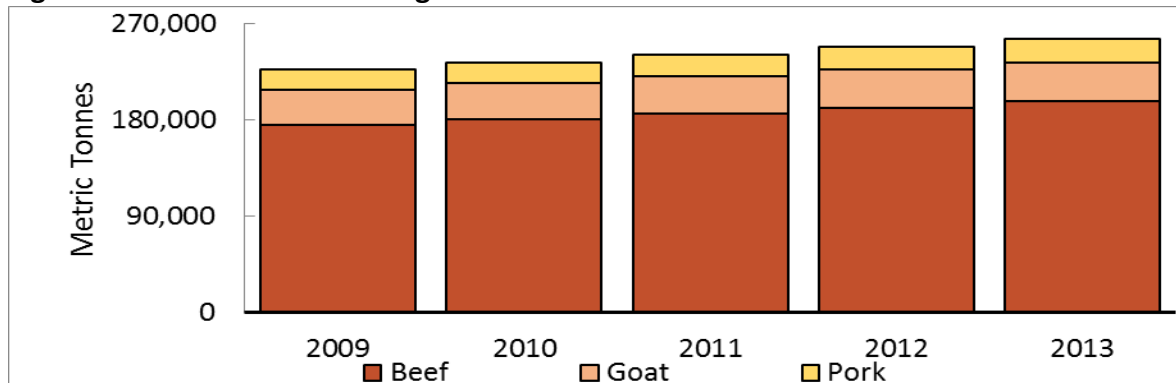
Figure 3: Trend in the Production of Milk (Billion Litres)

Source: MAAIF 2015

Meat Production

The production of meat (beef, goat, pork) increased by 1.4% between 2013 and 2014. Between 2009 and 2013, production increased from over 225,000 MT to 255,000 MT (Figure...). The proportions of beef, goat meat and pork have been in the ratio 77:14:8.

Figure 4: Meat Production in Uganda

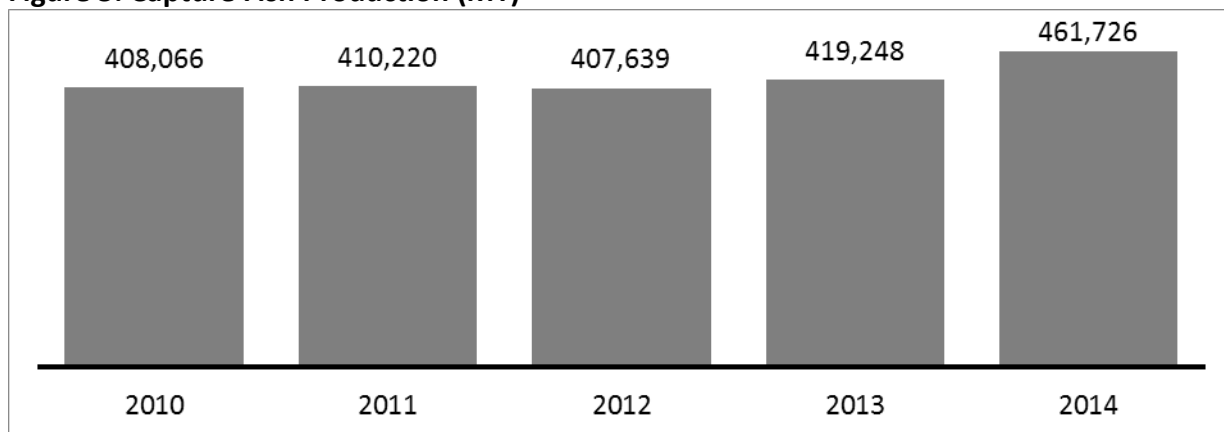


Source: UBOS Statistical Abstract

Fisheries Production

Fish production increased by 10% between 2013 and 2014. Figure 5 shows that the performance of the subsector demonstrated overall improvement and recovery of the fish stocks. Capture fish production increased from about 408,000 MT in 2010 to over 460,000 MT in 2014.

Figure 5: Capture Fish Production (MT)



Source: MAAIF 2015

The increase in production is due to stronger regulation and strict enforcement of guidelines that government has been conducting on all lakes. The emerging fishery of small fish species especially on Lakes Victoria and Albert has also contributed to the recovery of the fisheries subsector. In FY 2014/15, issued 3,343 fishing FVIPs and 2,508 Licenses to fishers, artisanal women processors to control illegal fishing. Aquaculture production in 2014 is 99.89MT, an increase from 90,000 MT in 2011. There is increasing investment in intensive water based production systems notably the cage culture with 2,000 cages established on Lake Victoria alone with annual estimated production of 1,739MT of Tilapia. The numbers of ponds

increased from 25,000 in 2011 to 27,000 in 2013. The number of fish farmers also increased from 14,000 to 15,000 in the same period.

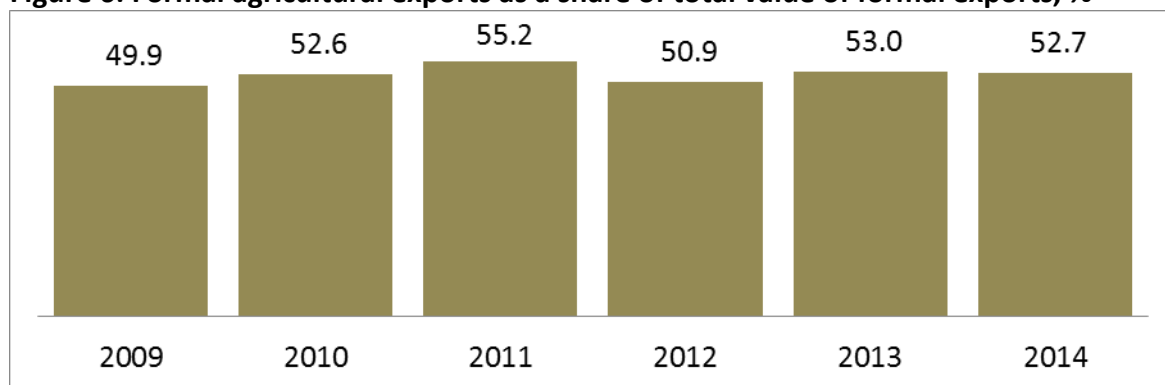
Outcome 2: Growth in Agricultural Trade and Value Addition

The DSIP indicators for this outcome are:

- a) Percentage of output of strategic commodities that is marketed
- b) Value of agricultural exports as a percentage of the value of total exports

In terms of value of formal exports as an indicator of growth in agricultural trade, there was a slight decline of the share from 53.0% in 2013 to 52.7% in 2014.

Figure 6: Formal agricultural exports as a share of total value of formal exports, %

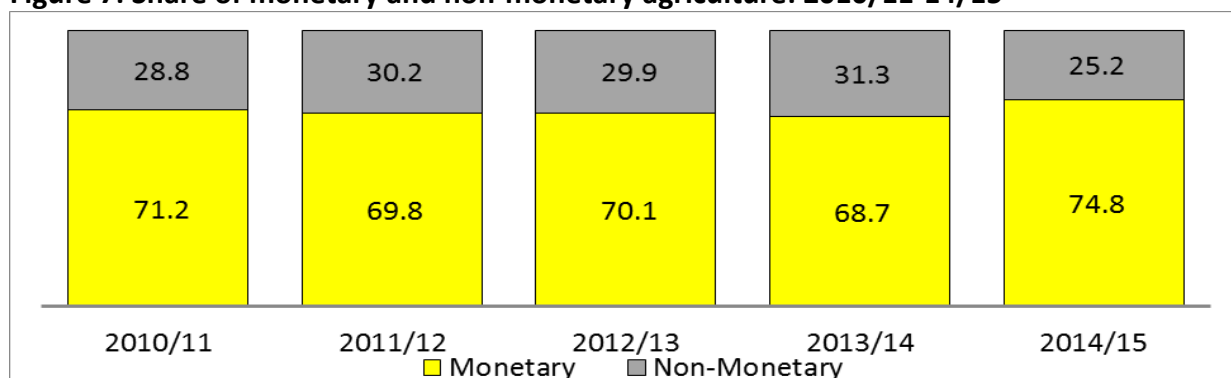


Source: MAAIF 2015

The average share of the value of formal agricultural exports to total exports value was 53% between 2009 and 2014, implying that the share has generally remained the same during this period. Figure 6 shows the annual proportions of formal agricultural exports to total formal exports. It indicates that the share of the value of formal agricultural exports has remained largely unchanged during this period.

The share of monetary agriculture GDP to total agriculture GDP has also remained almost constant at about 70% during 2010/11 to 2014/15 (Figure 7). The share of monetary agriculture increased from 69% in 2013/14 to 75% in 2014/15

Figure 7: Share of monetary and non-monetary agriculture: 2010/11-14/15



Source: Background to the Budget 2015/16

For specific strategic commodities, formal exports generally increased between 2013 and 2014, both in terms of quantities exported and value (Table 11)

Table 11: Value and Volume of Selected Commodity Exports: 2009-2014

		2009	2013	2014	% change 2013/14	2014/2009 Index	Average 2010-14
Coffee	USD mill	280,209	424,891	410,064	-3.5	146.3	391,534
	Qty (MT)	181,324	220,546	206,831	-6.2	114.1	187,418
Cotton	USD mill	22,718	31,686	21,918	-30.8	96.5	46,886
	Qty (MT)	20,515	18,671	12,674	-32.1	61.8	22,416
Tea	USD mill	59,761	85,589	84,739	-1.0	141.8	76,924
	Qty (MT)	44,446	61,971	60,296	-2.7	135.7	57,465
Fish and Fish Products	USD mill	111,209	128,134	135,256	5.6	121.6	131,116
	Qty (MT)	23,251	20,274	17,596	-13.2	75.7	21,145
Maize	USD mill	29,066	41,949	42,565	1.5	146.4	41,278
	Qty (MT)	94,440	122,287	134,903	10.3	142.8	137,492
Cocoa Beans	USD mill	27,829	54,833	59,429	8.4	213.6	46,473
	Qty (MT)	11,882	26,352	25,720	-2.4	216.5	21,230
Rice	USD mill	16,736	36,958	28,688	-22.4	171.4	27,886
	Qty (MT)	38,289	71,017	57,053	-19.7	149.0	53,912
Beans and Other Legumes	USD mill	14,735	20,577	26,050	26.6	176.8	18,298
	Qty (MT)	38,191	37,785	39,483	4.5	103.4	33,592
Hides and skins	USD mill	5,996	64,352	73,758	14.6	1,230.1	45,974
	Qty (MT)	5,160	30,865	33,533	8.6	649.9	24,277
Vegetables	USD mill	5,148	11,730	14,655	24.9	284.7	8,493
	Qty (MT)	3,706	8,059	12,084	49.9	326.1	6,898
Fruits	USD mill	932	1,502	1,707	13.7	183.1	13,13
	Qty (MT)	3,290	2,123	2,283	7.6	69.4	2,486

Source: MAAIF 2015

Apart from maize, beans, hides and skins, vegetables and fruits, the rest of the commodity exports declined in value or volume or both between 2013 and 2014. Cotton and rice recorded the highest declines in volume and value of exports.

In the medium term (2009 to 2014), cotton, fish and fish products and fruits recorded lower volumes exported (Index < 100). However, on the average (for the period 2010 to 2014) for almost all the commodities the exported quantities were higher than the baseline (2009), except for fish, beans and fruits. Value addition for agricultural exports is still low but increasing. Table 12 provides examples that illustrate the value addition/processing that has taken and is still taking place.

Table 12: Value Addition/Processing Activities in the Medium Term (2010-2015)

Commodity	Value addition/processing activities in the medium term (2010-15)
Coffee	<ul style="list-style-type: none"> • The capacity for coffee roasting has increased. There are now about 20 Ugandan coffee brands in the supermarkets. They include: Good African Coffee; Star Cafe; Crane Coffee; Big Gorilla (hand roasted); Buddu Espresso; Elgon Pride; Masaba; Savanna; Nile Coffee; Zigoti Coffee; and Sipi Elgon Café. • Uganda Vinci Coffee Company Limited is establishing a roasting, manufacturing and packing instant coffee for export and home consumption at Namanve Industrial Park. Several coffee grading plants have also been established in the Park. In West Nile, Coffee World Ltd through Paidha Washed Arabica Coffee Limited established a factory with a capacity of 72 MT of parchment per day. Kyagulanyi has established a factory in Erussi Sub-county in West Nile. • Bukonzho Joint Cooperative Society in Kasese established a 90kg/hour roasting facility to serve washed Arabica coffee producers. Bugisu Cooperative Union installed a new 15kg/hour roasting machine Kawacom (U) Limited is establishing a washing facility in West Nile with a capacity of processing 10 MT of parchment/ hour.
Poultry	Two modern poultry slaughter houses have been established by private investors (Ugachick Poultry Breeders and Yo-kuku) with a total capacity of 40,000 chickens a day
Meat	A modern abattoir has been constructed near Bombo for slaughter and processing of cattle, goats and sheep; producing meat focusing on the export market
Fish	New products (sweet mukene, powder mukene, simsim mukene, chilled mukene and chips mukene) have been developed. A mukene storage facility has been constructed at Kiyindi landing site in Buikwe district and two landing sites at Butiaba and Kiyindi became operational.
Milk	<ul style="list-style-type: none"> • Milk processing plants (medium and small), grew from 22 in 2011 with an installed capacity of over 0.7 million litres to 53 in 2013 with capacity of 1.3 million litres to 76 plants in 2014 with a capacity of 1.77 million litres. They produce various dairy products which include; pasteurized milk, UHT milk, casein, cream, butter, ghee, milk powder, yoghurt, ice-cream and cheese. • Milk Coolers have been provided in 16 districts. Mobile milking machines and their generators were distributed in 14 districts as well as two public universities. Insulated milk road tankers increased from 126 in 2011 to 243 in 2014
Maize and other crops	<ul style="list-style-type: none"> • Forty maize mills were distributed to millers in 18 districts • Sets of other equipment for maize milling, potato chipping, cassava grating and vacuum sealing machines were provided to 6 districts under the Lango Diocese and to women farmer groups in Buyende. • Nineteen cob crushers were provided to farmers in Kween district.
Honey	Seven sets of honey extraction and harvesting equipment were provided to bee keeping farmers in eight West Nile districts

Commodity	Value addition/processing activities in the medium term (2010-15)
Fruits	Two fruit juice extraction and processing equipment for fruit and vegetable were provided to Kayunga and Mityana districts, and a fruit dehydrator was provided to an organic farmers association in Wakiso District. The construction of the Soroti fruit factory is ongoing.
Tea	Five new tea factories were established in Bushenyi, Kabarole, Kanungu and Buhweju. This increased the number of operational tea factories to 28.
Cotton	In 2014, a factory that produces yarn, garments and textile was opened. This was in addition to existing 2 textile and 3 cotton wool manufacturing factories
Sugar	New sugar processing plants have been set up and include: Mukwano Sugar Factory and Kafu Sugar Factory both in Masindi district, Tirupati Sugar Factory in Nakasongola district, Uganda Crop Industries in Buikwe district, Kamuli Sugar Factory - Kamuli district, Kenlon Sugar Factory in Buyende District and Bugiri Sugar Company in Bugiri district.

Outcome 3: Enabling Environment and Institutional Strengthening

Enabling environment

MAAIF has a role to put in place a policy and regulatory enabling environment by formulating, reviewing and operationalising policies, legislation, standards and guidelines to support agribusinesses. The DSIP listed several laws, rules, and legislations that needed to be reviewed because they were inappropriate or obsolete. They include food, plant, livestock and fisheries legislation. The DSIP also noted lack of an overarching agricultural policy to guide the sector.

Table 13: Policies, Legislations and Strategies Developed and their Status

Sub-sector	2014/15	2010/11-2013/14
Fisheries	<ul style="list-style-type: none"> The National Fisheries Policy 2004 was reviewed and a draft National Fisheries Policy 2014 developed. The Beach Management Units (BMU) Statute of 2003, the Aquaculture Rules of 2003. and Quality Assurance Rules of 2008 were reviewed and cleared by the Solicitor General Guidelines for cage farming and management of fish breeding areas were developed. A National Task Force for development of an Aquaculture Policy was constituted. 	
Crops	<ul style="list-style-type: none"> Plant Protection and Health Act 2015 was assented to by the President A National Fertilizer Policy, Strategy Regulations were finalized. These were submitted to MFPED and are 	<ul style="list-style-type: none"> Plant Variety Protection Act 2014 National Coffee Policy was launched in 2014 Organic Agriculture Policy

Sub-sector	2014/15	2010/11-2013/14
	<p>awaiting a Certificate of Financial Implications.</p> <ul style="list-style-type: none"> • A National Seed Policy was finalized and will be submitted to Cabinet. The Seed Regulations were finalized and are awaiting gazetting. • Banana Bacterial Disease Control Strategy • Maize Lethal Necrosis Strategy 	<p>still in draft form</p> <ul style="list-style-type: none"> • Cassava Policy still in draft form
Livestock	<ul style="list-style-type: none"> • National Policy on Tsetse eradication and trypanosomiasis elimination drafted; • Avian Influenza Preparedness and Response Plan drafted; • Foot and Mouth Diseases control policy drafted • Tick and tick borne disease control policy drafted • National Dairy Policy drafted and stakeholder consultations completed in all milk sheds 	<ul style="list-style-type: none"> • Animal Health Master Plan; Laboratory Master Plan and Identification and Traceability Strategy put in place • Rangeland and Pastoralism Policy still in draft form • Apiculture Policy still in draft form
General	An Agriculture Police Unit to enforce regulations in crop, animal and fisheries sub-sectors in place.	National Agriculture Policy approved in 2013

Table 13 summarizes policy and legislative developments in 2014/15 in particular but also covering the 2010/11-2013/14 period as well. It shows that considerable progress has been made in putting the necessary policies and legislation in place. However, the majority are still in draft form and at various stages at the technical level, or TPM level or Cabinet level. The review process has been generally slow because some of these policies and bills have spent several years in draft form.

In the next medium term, MAAIF technical and political leadership shall prioritize and set timelines for development and completion of priority policies and legislation, at least at technical/ministry level. The Ministry will also lobby cabinet and parliament as the case may be to expedite the review/approval of the policies/legislation.

Institutional strengthening

- a) MAAIF carried out a comprehensive needs assessment and capacity building programme covering all priority sector needs for MAAIF and LGs Production departments. Six new departments (Crop Inspection and Certification; Entomology; Fisheries Resources and Management; Fisheries Regulation; Aquaculture and Agribusiness) and one division (Statistics) have been established which will improve the effectiveness of the Ministry to

delivery on its mandate. The Ministry also carried out recruitment for 45 priority positions that were identified in the restructuring report. In total, almost 200 personnel positions have been filled over the last five years. The Ministry conducts phased recruitment to fit within resources available. NARO developed a staffing plan in 2008 with defined time bound targets. However the staffing gap has continued to increase from 37 in 2011/12 to 165 in 2013/14 but NARO is in the process of recruiting staff to reach the targeted establishment of 995 by June 2015. In the meantime, NARO has sponsored staff for long- and short term training. Thirty eight scientists have been supported for long-term training of which 32 are pursuing PhDs while 6 are pursuing Masters Degrees. Though a staff capacity development plan for Agricultural Training Institutes is in place, filling of the over 100 critical positions has not been done.

- b) In 2014, government put in place a single spine agricultural extension system policy and MAAIF has already started implementing it. This has involved restructuring NAADS by removing the presence of the existing public parallel systems in local governments, i.e. the 'traditional' extension workers and the NAADS extension staff. a sub-county agricultural production structure has been put in place; contract sub-county NAADS extension workers were replaced by regular extension staff who are being recruited; extension and input provision were separated with extension staff concentrating on extension service delivery while the restructured NAADS Secretariat and the Army focus on input provision; and a Directorate of Agricultural Extension Services has been established in MAAIF to coordinate extension services. It is expected that when the Directorate of Agricultural Extension and the single spine system is fully operational, linkages and collaboration between MAAIF and LGs will be improved.

However, implementation of the reforms has been slow and sub-counties were critically understaffed in the whole of 2014/15. A report by AFAAS indicated that 52% of sub-counties operated without a single extension worker for a year (2014/15) and yet inputs were being distributed to farmers. The NAADS Act has not yet been repealed.

Policy Implementation

Commodity approach

- a) The DSIP prioritized 15 commodities to be promoted in a phased manner in relevant agro-ecological zones. In 2011, government adopted a commodity value chain approach to implementing DSIP and selected 10 commodities from those prioritized in the DSIP to promote for short-term gains in food security and/or national and household incomes. In 2012, as a way of operationalizing the commodity approach,
- b) MAAIF formulated 13 commodity-specific Framework Implementation Plans (FIPs). Table 14 shows the commodities selected.

Table 14: Selected Commodities

DSIP priority commodities	Commodity approach prioritized commodities	Commodities for which FIPs were developed
Coffee; Tea; Bananas; Cassava; Irish Potatoes; Maize, Beans, Citrus, Pineapples, Apples; Beef Cattle; Dairy Cattle; Goats; Poultry; Fish	Coffee, Tea, Bananas; Cassava; Maize, Beans, Rice,, Dairy Cattle, Beef Cattle And Fish,	Coffee, Tea, Cotton, Rice, Maize, Beans, Cassava, Irish Potatoes, Fruits, Bananas, Dairy, Meat, Fish

- c) MAAIF planning and budgeting is now based on implementing the commodity approach. In addition to funding by the Ministry, donor projects have aligned themselves to the commodity approach. For example, USAID is supporting coffee, maize and beans value chain development; Japan support is mainly towards rice value chain and a project for supporting Cassava, Maize, Beans and Coffee has been developed for funding by government and World Bank; Platforms for maize/beans cassava, rice and coffee platforms have been put in place.

NARO research and NAADS advisory services and input supply were also geared towards priority commodities. However one of the challenges of NAADS was that it used a bottom-up approach, with farmers identifying their priority enterprises instead of restricting themselves to the national priority commodities.

Private sector investment in agriculture

The agriculture sector benefits from both private and public funding sources some of which are briefly dedscribed below.

a) Agricultural Credit Facility

In 2009, a partnership between Government and Participating Financial Institutions (commercial banks, the Uganda Development Bank, micro deposit-taking institutions, and credit institutions) established an Agricultural Credit Facility (ACF) to extend subsidised loans to agricultural processing and mechanization projects. Eligible projects include: agro-processing and any other related agricultural and agro-processing machinery and equipment; agricultural machinery; and post-harvest handling equipment and storage facilities. Government contributes UGX 30 billion annually and PFIs match the GoU contribution thereby creating a pool of annual loanable fund of UGX 60 billion. The recent data are available in the MFPED monitoring report for 2013/14 which reported that the number of firms accessing the ACF increased by 64% from 154 in June 2012 to 253 in June 2014 and UGX 162.5 billion (or 67 percent of the released funds including committed funds) had been expended on ACF projects by the end of June 2014. About 59% had been invested in agro-processing machinery, 17% in farm infrastructure, and 14% in the purchase of farm equipment and machinery. Of this total, small and medium enterprises (loans below UGX 200 million) comprised 58 percent.

Table 15: Agricultural Credit Facility Expenditures by Investment Areas (July 2009–June 2014)

Investment Area	Total spent, UGX billion	Share, %
Agro processing machinery (including wheat, tea, rice, maize, milk, cotton)	95.7	59
Farm expansion (poultry houses, piggery, farm structures, and modernization)	27.9	17
Tractors and farm equipment	23.5	14
Irrigation and greenhouse facilities	4.2	3
Other agricultural machinery and activities (such as hatcheries, generators)	4.7	3
Total	162.5	100

Source: MFPE Budget Monitoring Report 2013/14

b) Private Sector Credit to Agriculture

Relative to FY2013/14, there was a pronounced acceleration in credit growth for the agriculture sector in FY 2014/15. The average annual private sector credit growth in 2013/14 was 29.7% and this increased to 35.8% by March 2015 (Background to the Budget 2014/15). Data from Bank of Uganda show that, as of June 2015, private sector credit to agriculture amounted to UGX 1,070 billion, accounting for 9.8% of total bank lending. Most of the agriculture lending was destined for production (43%) and processing (38%), followed by marketing (19%). Production feeds and keeps the rest of the value chain moving; and is getting lesser credit than marketing and processing. This may mean that there is a need for government to increase its support to production (since such production level functions as extension, research, disease control are public good services).

c) Private Local and Foreign Direct Investment

Uganda Investment Authority licenses private sector investments in different sectors that wish to benefit from investment incentives. For each sector it also reports the number of planned projects, their value and potential number of jobs. One of these sectors is “Agriculture, Hunting, Forestry and Fisheries”. Available data show that the share of agriculture sector to total value of projects declined from about 21% in 2010 to 9% in 2013. However, there are data in the manufacturing sector that has some projects that would qualify as “agro-processing” and in the trade sector that would qualify as agricultural marketing, but they are not disaggregated.

CHAPTER THREE: SUB SECTOR PERFORMANCE

This section presents an overview of sub sector performance for the crop, livestock and fisheries directorates. In addition it also presents performance review from NARO and NAADS as well as from the department of Agricultural Investments and Enterprise Development.

3.1 Crop Sub Sector Performance

3.1.1 Introduction

The Directorate of Crop Resources constitutes of three (3) departments each headed by a Commissioner while two of the MAAIF agencies are directly linked to the Directorate and these are;

- a) Uganda Coffee Development Authority (UCDA);
- b) Cotton Development Organization (CDO).

During the financial year under review, there were Nine (9) development projects under the different departments of the directorate as shown in Table 1.

Table 16: Development Projects under the Directorate in 2014/15

Project	Department	Funding
1. Support for Tea Cocoa Seedlings	Crop Production	GoU
2. Crop Diseases and Pest Control	Crop Protection	GoU
3. Labor Saving Technologies and Mechanization	Farm Development	GoU & JICA
4. Vegetable Oil Development Project – Phase 2	Farm Development	GoU & IFAD
5. Rice Development Project	Crop Production	GoU & JICA
6. Agricultural Cluster Development Project	DCR	GoU & WB
7. Commercialization of Agriculture in Northern Uganda	Crop Production	GoU & FAO
8. Agriculture Technology Transfer (AGITT) Cassava value Chain	Crop Production	GoU & DFID
9. 9. Enhancing national Food Security through increased Rice Production	Crop Production	GoU & IDB

3.1.2 Mandate and Functions

Mandate of the Directorate

Promotion of crop production, value addition and marketing, crop pests and disease control; Enforcement of regulations and standards on agricultural chemicals, plant health and seed quality; Farm development, agricultural mechanization, water for agricultural production; Promotion of sustainable use of natural resources.

Functions of the Directorate

1. Provide technical guidance for formulation and implementation of policies, plans and strategies in crop production, marketing, protection, inspection and certification;
2. Support, supervise and monitor:-
 - a) Sustainable market oriented production;
 - b) Crop pests and diseases control;
 - c) Plants and plant products quality and safety;
 - d) Primary processing and value addition of crop products;
 - e) Improved food and nutrition security;
 - f) Irrigation and agricultural mechanization.

3.1.3 Performance of the Directorate in the FY 2014/15

The performance of the directorate is presented in respect of specific crop commodities and crop protection activities. The commodities focused on are coffee, cotton, oil palm, tea, cocoa, rice, maize, beans and citrus. The crop protection activities under review include pest and disease control, and quality assurance on agricultural inputs.

3.1.3.1 Coffee

The mandate of the Uganda Coffee Development Authority (UCDA) is to promote and oversee the entire coffee industry through supporting research, propagation of clean planting materials, quality assurance, value addition and improved marketing of coffee in order to optimize foreign exchange earnings for the country and payments to the producers.

a) Key Issues that were to be addressed

In the FY 2014/15, UCDA continued to implement its programs in line with its mandate focusing on the following key strategic areas:-

- i. Promoting production and productivity through coffee replanting and rehabilitation;
- ii. Supporting coffee research;
- iii. Support to coffee development in Northern Uganda;
- iv. Value addition, quality assurance and generic promotion;
- v. Containment and management of pests and diseases;
- vi. Improving the marketing of coffee.

b) Performance for FY 2014/15

Budget Performance

- a) The approved annual budget for UCDA for FY 2014/15 was UGX 22.186 billion comprising Non-Wage Recurrent expenditure of 7.912 billion and NTR of 14.274 billion;
- b) The total releases was UGX 36.74 billion (UGX 7.465 Non-Wage Recurrent and UGX 29.275 NTR);
- c) Overall, UGX 31.93 billion was spent by end of Financial Year representing 166% of budget released and 87% of the releases spent;

- d) The performance of the NTR at 205% was due to additional funding totaling UGX 13 billion which was transferred from NAADS Secretariat to cater for coffee seedlings under Operations Wealth Creation framework.

Table 17: Summary of Vote Expenditure

	Approved Budget	Released	Spent	% Budget Released	% Budget Spent	% Releases Spent
NWR	7.912	7.465	7.46	94%	94.29%	100%
NTR	14.274	29.275	24.47	205%	171.43%	84%
Total	22.186	36.74	31.93	166%	143.92%	87%

Table 18: Summary of Vote Expenditure

	Approved Budget	Released	Spent	% Budget Released	% Budget Spent	% Releases Spent
NWR	7.912	7.465	7.46	94%	94.29%	100%
NTR	14.274	29.275	24.47	205%	171.43%	84%
Total	22.186	36.74	31.93	166%	143.92%	87%

c) Seedling Distribution

During the FY, the Authority distributed 68.2 MT of seeds comprising 40.4 MT of Robusta and 27.8 MT of Arabica. A total of 108.6 million seedlings comprising 80.8 million Robusta and 27.8 million Arabica were raised. Through Operations Wealth Creation (OWC) planted 86.5 million seedlings. The plantings by region and the number of households served is presented in the following table.

Table 19: Plantings per season and number of households served

Region	Sept-Nov 14		Mar-May15		Total	
	Seedlings	Hhlds	Seedlings	Hhlds	Seedlings	Hhlds
Central	12,115,680	53,078	15,978,799	79,894	28,094,479	132,972
Eastern	4,830,900	28,873	9,025,800	53,569	13,856,700	82,441
Northern	590,000	1,967	965,771	4,732	1,555,771	6,699
Western	11,741,250	51,206	16,471,483	82,357	28,212,733	133,564
South Western	6,976,726	36,700	7,825,630	43,098	14,802,356	79,798
Total	36,254,556	171,824	50,267,483	263,650	86,522,039	435,474

d) Performance against Targets

Table 20: Performance against Targets

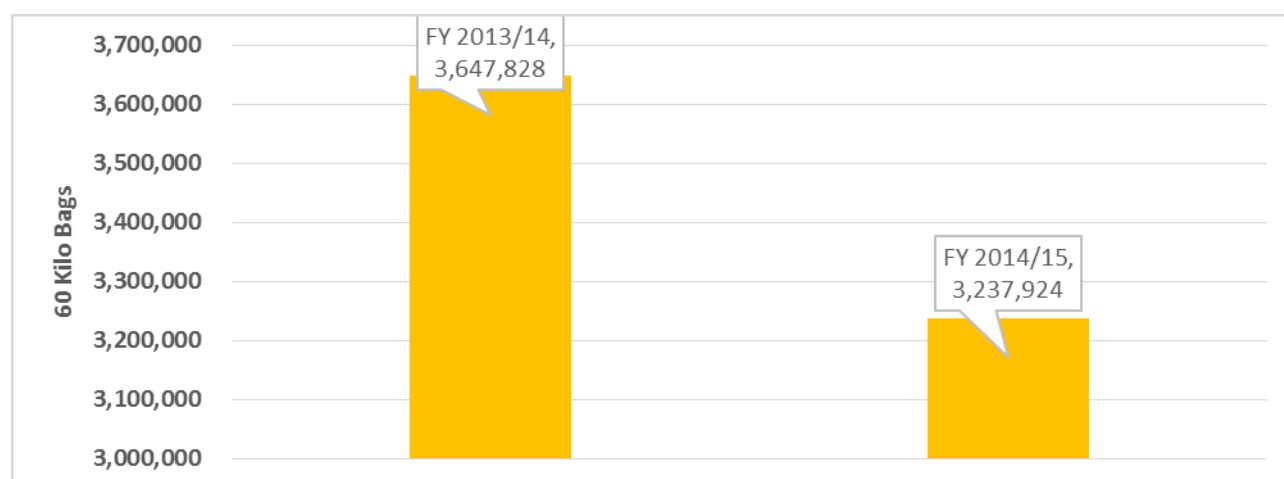
Planned activities	Performance against planned	Explanation of Performance/remarks
Raise 96 million seedlings; 76 million Robusta and 20 million Arabica	Raised 108.6 million Seedlings (80.8m Robusta and 27.8m Arabica). Distributed 54.3 MT of seeds (40.4MT Robusta and 13.9MT Arabica) Planted 86.7 million seedlings	Increased seedlings than target was due to better germination rates than anticipated More seedlings were planted due the requirement by Government to plant 100 million seedlings
Distribute 200,000 CWD-R plantlets to at least 285 CWD-R Nursery operators	Distributed 25,000 Coffee Wilt Disease Resistant (CWD-R) seedlings to 60 mother gardens	The CWD-R target was not achieved because of the slow biological process of the Tissue Culture propagation method
Support 30 CWD-R mother gardens to produce 10,000 cuttings each	Supported 27 mother gardens with nursery equipment for infrastructure development. The supported nurseries produced 93,947 cuttings	The below target was due to increase in prices of materials that occurred during the FY against the approved budget for the output. The underperformance was produced due to lack of adequate CWD-R seedlings generated through tissue culture
Facilitate 30 District Coffee Platforms to hold coffee shows	Facilitated 30 District Coffee Platforms to undertake district based coffee production and promotional activities	Intervention achieved as planned
Produce 2MT of seed for distribution to nurseries	Produced 1.313MT of seed distributed to community based nursery operators	The below target was because of the change in weather pattern which affected the timely availability of seedlings. This was addressed by sourcing more seeds from the Central Region.
Raise 4 million coffee seedlings	Raised 1.926 million seedlings	Below target seedlings generated due to bad weather which affected seed production
Establish 20 Technology Development sites at 20 sub counties.	Established 15 Technology Development sites in 15 sub counties and supported 5 existing ones	Farmers preferred support for the existing TDS
300 MT of Kiboko sold by farmers	Marketed 169.9 MT of Kiboko by farmers at UGX 2,000 per kg.	Low production was due to change of crop cycle and adverse flower /fruit abortion
Certify 3.6 million 60-kg bags of coffee for export	Certified 3.193 million 60-kg bags for export.	The number of bags of coffee certified declined due to a decrease in the volume of coffee exports
Showcase Uganda	Showcased Ugandan coffee in	The number of shows increased due to

Planned activities	Performance against planned	Explanation of Performance/remarks
coffee in 6 local trade fairs	10 local trade fairs	local demand
Penetration to new markets	Exported 156,178 bags (9,370.68 tons) of coffee to the Asia pacific region.	This is due to the promotional efforts in the region
Promote Uganda Coffee in 10 International coffee events	Promoted Uganda Coffee in 12 International coffee events (Countries)	The number of shows increased due to demand especially for the China market
Train 40 Youth to participate in the Inter-university Barista Championships	Trained 40 Youth who participated in the Inter-university Barista Championships	Trained 40 youth on Barista Skills

e) Export Performance

The target for volume of coffee exports in FY 2014/15 was 3.6 million bags. The actual volume of bags exported was 3.24 million (90%). The decline in volume is attributed to the impact of drought experienced in January and February of 2014 which affected the main crop in Masaka as well as the fly crops in Central and Eastern regions. In comparison with the last FY, the volume of total exports in FY 2014/15 declined by 11% (3,237,924 -60 kilo bags of coffee), compared to FY 2013/14 (3,647,828-60 Kilo bags).

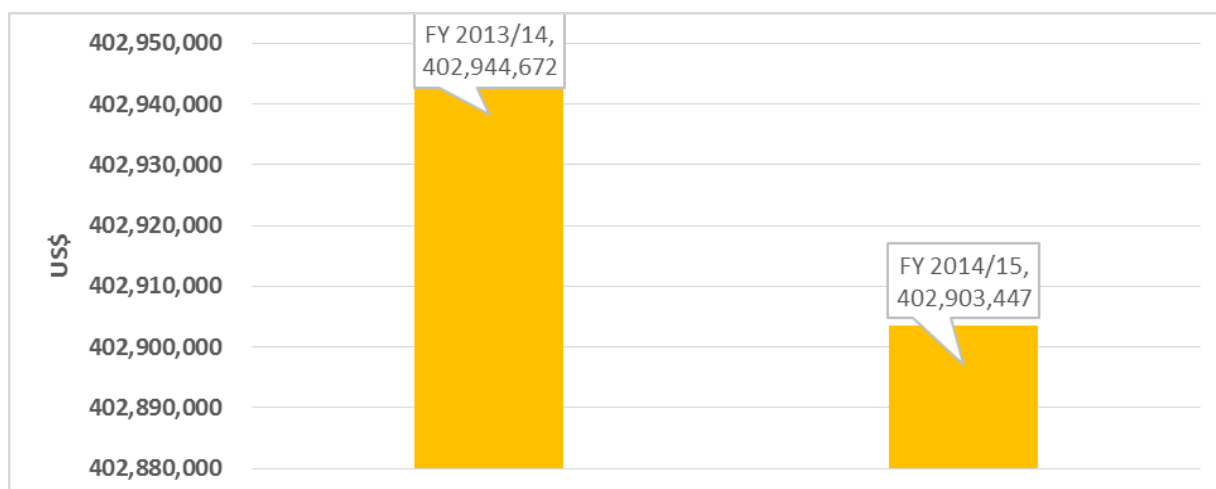
Figure 8: Volume of Coffee Exports for FY 2014/15 compared to FY 2013/14



Value of Exports

The targeted value of exports for FY 2014/15 was US\$ 475 million. The actual value of exports recorded was US\$ 402 million (85%). The value of coffee exports for FY 2014/15 remained stagnant at US\$ 402.9m compared to the FY 2013/14. The average unit value of coffee in the FY was US\$ 2.07 compared to US\$ 1.84 in the FY 2013/14.

Figure 9: Value of Coffee Exports for FY 2014/15 as compared to FY 2013/14



f) Management of diseases and Pests

- i. Established 34 Integrated Pest Management (IPM) demonstration in 34 districts
- ii. Procured 3,200 liters of chemicals, sprayed 2,800 acres in 1,400 parishes for control of Black Twig Borer. This plus increased awareness by farmers has reduced the rate of spread of the pest.
- iii. Procured 20 motorized spray pumps for more effective spray impact and also speed up the exercise

g) Support to Coffee Research

Provided coffee research with financial support totaling UGX 1.255 billion. The research programs funded included infrastructure development for the tissue culture laboratory at NaCORI, development of an efficient and effective coffee seed system, coffee Integrated Pest Management (IPM); development of sustainable technologies for management of the coffee wilt disease and leaf rust; determining adoption of coffee technologies and impact of Farmer Field Schools (FFSs).

h) Value Addition

There is growth in the roasting capacity with about 20 Ugandan coffee brands on the supermarket shelves. The major brands include: Good African Coffee; Star Cafe; Crane Coffee; Big Gorilla (hand roasted); Buddu Espresso; Elgon Pride; Masaba; Savanna; Nile Coffee; Zigoti Coffee; and Sipi Elgon Café. Uganda Vinci Coffee Company Limited is establishing a roasting, manufacturing and packing instant coffee for export and home consumption at Namanve Industrial Park. Coffee grading plants have also been established in the Park reflecting increased investment in the coffee sub-sector.

In West Nile, Coffee World through Paidha washed Arabica Coffee limited established a factory with a capacity of producing 72 MT of parchment per day. The facility processed 180 MT of parchment in last harvesting season. Another factory was established in Erussi Sub-county in West Nile by Kyagalanyi. Bukonzho Joint Cooperative Society in Kasese established a

roasting facility to add value for the members who produce washed Arabica coffee for the specialty coffee market. The capacity is 90 kg per hour.

Bugisu Cooperative Union installed a new roasting machine with a capacity of producing 15 kg per hour. The coffee roasted is branded as Elgon Fly Coffee and at the moment mainly for domestic consumption. Kawacom Uganda limited is establishing a washing facility in West Nile with a capacity of processing 10 MT of parchment per hour

Summary of achievements

- i. Volume: 3.237 million 60-kilo bags
- ii. Value: US\$ 402 million
- iii. Generated: 108.6 million seedlings and planted 86.7m seedlings worth UGX 30 billion in 89 districts serving 435,474 households
- iv. Penetration into new markets such as the Far East: Korea, Australia and Ecuador
- v. Quality Improvement as reflected by Specialty and Screen 18 volumes
- vi. Five new factories were established (1 in Paidha, 1 in Nebbi, 1 in Kasese and 2 in Mbale)

i) Challenges in programme implementation FY 2014/15

- i. Low farmer-extension staff ratio (29 staff for 89 districts)
- ii. Limited adaptation to weather changes-leading to low yields, poor quality, prevalence of diseases and pest and low survival rates of seedlings planted
- iii. Difficulty to harmonize/align agricultural production cycles with the reporting period.

3.1.3.2 Cotton

a) Introduction

During FY 2014/15, the sub-sector's objective was to increase cotton production and contribute to increased household incomes. This was done through implementation of various interventions under six broad output areas namely; provision of planting seed, seed multiplication, farmer mobilization for cotton production and provision of cotton targeted extension services, provision of production inputs and mechanization of land opening.

b) Key Interventions

- i. Increasing and improving access to high quality production inputs for cotton production by availing the inputs at subsidized prices and where necessary on credit to organized farmer groups.
- ii. Improving access to extension services for training farmers on the recommended agronomic practices using demonstration gardens established at parish level.
- iii. Availing cotton farmers with low cost easy to use and easy to maintain technology for mechanizing land opening by distributing free ox ploughs to facilitate timely land preparation and reduce farm drudgery. Besides ox ploughs, tractor hire services were also provided to cotton farmers at subsidized rates.

c) Performance of cotton sub-sector outputs

Table 21: Performance of Cotton Sub-Sector Outputs

Planned activities and targets	Performance against planned	Explanation for performance/remarks
Organize and coordinate distribution of high quality cotton planting seeds to farmers in 58 districts in Eastern, Northern, West Nile, Mid-West & Central and Western Regions.	1,580 MT of de-linted and graded cotton planting seed were processed and distributed to farmers in 55 districts in Eastern, Northern, West Nile and Mid-West & Central and Western Regions.	<ul style="list-style-type: none"> • Three districts in West Nile were not served seed because farmers did not register for cotton production. • Drought experienced during July and erratic rains in August 2014 (the cotton planting window) affected planting and production.
Organize and mobilize seed growers to establish about 10,000 acres of seed crops in seed multiplication areas which were expected to produce 3,750 MT of certified seed.	Approximately 8,516 acres were established under seed multiplication in Rubirizi, Amolator, Alebtong, Dokolo, Oyam, Lira, Gulu, Abim, Bullisa, Hoima and Masindi.	Drought experienced during July and erratic rains in August 2014 (the cotton planting window) affected planting.
Organize establishment of 3,500 demonstration plots for training farmers on the Recommended agronomic Practices for increasing production and quality.	3,078 demonstration plots were established.	Drought during July and erratic rains in August 2014 resulted in reduction in the number of demonstration gardens planted.
Organize and coordinate the training and deployment of 280 Field Extension Workers (FEWs).	333 Field Extension Workers (14 Assistant Field Officers, 51 Area Coordinators and 268 Site Coordinators/Lead farmers) were trained and deployed.	The number of Field Extension Workers (FEWs) was increased due to the use of Lead farmers as extension agents in a bid to promote farmer-to farmer dissemination of production technologies and information.
Organize and coordinate procurement and distribution of fertilizers, pesticides and spray pumps to farmers in 58 cotton growing districts in	262 MT of NPK & Urea fertilizers, 690,658 units of pesticides and 963 spray pumps were distributed to farmers in the 55 cotton growing districts.	Inputs were availed at subsidized prices and where necessary on credit.

Planned activities and targets	Performance against planned	Explanation for performance/remarks
Eastern, Northern, West Nile, Mid-West & Central and Western Regions.		
1. Procure and distribute 1,000 ox-ploughs to cotton farmers in Eastern, Northern, West Nile, and Mid-West & Central Regions. 2. Organize tractor hire services for cotton farmers.	<ul style="list-style-type: none"> • Procured 1,000 ox-ploughs and distributed them to 1,000 farmer groups and individual medium scale farmers in Eastern, Northern, West Nile and Mid-West Regions. • Organized tractor hire services for cotton farmers 	Beneficiary farmers provide their own oxen.

d) Cotton sub-sector Outcomes

1. **Cotton production** - As a result of the above interventions and activities, cotton production increased by 18% from 14,594 MT of lint (equivalent to 78,364 bales) in FY 2013/14 to 17,275 MT of lint (equivalent to 93,093 bales) in FY 2014/15. This was attributed to intensive farmer mobilization and training, and increased use of yield enhancing inputs especially fertilizers and pesticides.
2. **Lint sales**– lint exports increased from 14,156 MT in FY 2013/14 earning US\$ 24.49 million to 16,575 MT in FY 2014/15 earning US\$ 21.22 million. The drop in export earnings was due to decline in lint prices on the international market.

In FY 2014/15, 518 MT of the lint produced were consumed locally by 2 textile and 3 cotton wool manufacturing companies compared to 438 MT of lint used locally in FY 2013/14.

e) Participation of key stakeholders

- i. Implementation of activities in the sub-sector continued to be spearheaded by CDO in collaboration with ginners under their umbrella association; Uganda Ginners and Cotton Exporters Association (UGCEA).
- ii. UGCEA provided financial support for procurement and processing of planting seed, for salaries for extension workers, procurement and distribution of production inputs and tractor hire services.
- iii. Government of Uganda supported CDO to monitor and provide technical support for implementation of activities and procurement and distribution of ox ploughs.
- iv. Other key stakeholders include farmers who grow the crop, ginners/lint exporters who gin and sale the lint, oil millers who produce edible oil and cotton seed cake from cotton seeds and textile and cotton manufacturers who add value to the lint.

3.1.3.3 Oil Seeds

a) Introduction

Under the Vegetable Oil Development project (VODP) supported by the IFAD, the sub-sector objective is to increase domestic production and supply of affordable vegetable oil and its by-products in Uganda and neighboring countries. The project is implemented through the oil palm development component with activities in Kalangala and Buvuma; the oil seeds development component (sunflower, soybean, sesame and ground nuts) in 52 districts; and Project Management.

b) Performance

In Kalangala, small holder farmers have been supported with oil palm garden establishment and maintenance loans. Between January 2010 and June 2015, the project has disbursed a total of UGX 34.8 billion to 1,700 smallholder oil palm farmers of which UGX. 4.5 billion has been repaid. The total area planted by smallholder farmers now stands at 4,277 ha while the nucleus estate has 6,440 ha bringing the total area of oil palm in the islands to 10,717 ha. Consequently, in the same period, smallholder farmers have harvested a total of 14,559 MT of fresh fruit bunches (FFB) that fetched UGX 5.5 billion. As more oil palm gardens come to fruiting, farmers are able to pay back the loans.

Crude palm oil (CPO) production declined from 19,190 MT valued at UGX 49.9 billion between January to December 2013 to 18,652 MT valued at UGX 39.8 billion between January to December 2014. The decline in CPO was due to a reduction in rain fall at the beginning of 2014. Taxes to GOU from BIDCO and OPUL increased by 18%, from UGX 109.4 billion between January and December 2013, to, UGX 129 billion between January and December 2014. For the FY 2014/15, the key interventions, outputs and outcome of the project are summarized in Table 20.

Table 22: Oil Palm Performance

Planned activities and targets	Performance against planned	Explanation for performance / remarks
1. Support farmers to plant 450 hectares of oil palm on Bugala (50 Ha) and Bunyama (400 Ha) in Kalangala	414 hectares planted by smallholder farmers on Bugala and Bunyama islands in Kalangala	Seedlings worth 30 Ha used by smallholder farmers for replacement planting/ gap filling and worth 7 Ha reserved for the trial gardens.
2. Register 113 new smallholder farmers in Kalangala	90 new smallholder farmers (35% female) registered	More farmers will be registered when planting the last phase in Bubembe.
3. Provide UGX 1.5 billion in loans to 1,723 smallholder farmers	UGX 1.3 billion provided to 1,700 smallholder farmers	The targets for planting and registered farmers not achieved which affected the loan disbursement.

Planned activities and targets	Performance against planned	Explanation for performance / remarks
4. Support smallholders to harvest 12,000 tons of FFB in Kalangala	Smallholders harvested 14,559 tons of FFB in Kalangala valued at UGX 5.5 billion.	Kalangala received more than projected rainfall in FY 2014/15 which increased the FFB harvests
4. Purchase 1,500 ha of land for the nucleus estate in Buvuma district	975 ha of land purchased for the nucleus estate in Buvuma	800 ha former public land acquired earlier by the project pending negotiations with Buganda Land Board.
5. Support NaCRRRI to produce 12 MT of soybean foundation seed	15 MT of soybean foundation seed produced by NaCRRRI	Growing interest by farmers to participate in multiplication of soybean
6. Support NaSARRI to produce 10 MT of hybrid parental lines of sunflower, 10 MT of simsim and 12 MT of ground nuts	1.5 tons of sunflower; 635 kgs and 765 kgs of simsim and ground nut foundation seed; 2 tons of sim seed and 3 tons of QDS groundnut seed for serenut 5, 6, 11 & 14 were produced	Falling short of the targets was as a result of weather vagaries [
7. Mobilize 542 farmer groups with 30% females to grow oil seeds in the regional hubs of Gulu, Mbale, Arua and Lira	1,218 mobilized and trained in oil seeds value chain	Project recruited private extension service providers to expand the outreach of project activities in the project area.
8. Develop a financing product for the oilseeds regional hubs in partnership with financial institutions	UGX 2.4 billion disbursed by UDBL, FINCA, Equity Bank and Opportunity Bank for land opening, purchase of seed and maintenance of gardens	Financial Institutions partnered with the project to build the capacity of farmers in the hubs to benefit from the credit products

c) Summary of performance

- i. Smallholder estate has increased from 3,863 ha in June 2014 to 4,277 ha in June 2015. Total oil palm scheme in Kalangala has increased to 10,717 hectares (6,440 ha planted by private sector partner)

- ii. Number of smallholder farmers receiving project services increased from 1,610 in June 2014 to 1,700 in June 2015
- iii. Loans to smallholders for establishment and maintenance of their gardens increased from 31.6 billion to UGX 34.8 billion in June 2015.
- iv. Farmers' income increased from UGX. 4.2 billion in FY 2013/14 to UGX 5.5 billion in FY 2014/15. The loan repayments increased from UGX. 3.3 billion in June 2014 to UGX 4.5 billion in June 2015.
- v. Land purchased and cleared of all encumbrances in Buvuma increased from 3,871 ha in June 2014 to 4,046ha in June 2015
- vi. Seed companies and dealers accessed 15 MT of high quality soybean seed for multiplication and sale to farmers
- vii. NaSARRI planted 10 acres of sunflower foundation seed, 6 acres of sesame foundation seed and 8 acres of ground nuts foundation seed
- viii. Number of project supported oil seeds growers in the regional hubs increased from 1,176 in June 2014 to 2,394 in July 2015
- ix. 9 groups benefitted from the loans comprised of 1,963 individuals (46% female). The farmers opened a total of 18,020 acres for oil seeds.

3.1.3.4 Tea

a) Introduction

The tea commodity in the sub-sector is promoted through the Support to Tea and Cocoa Seedlings project funded by the Government of Uganda. The main objective is to increase household incomes of tea farmers through increased tea production and export earnings. Tea production is being expanded in both traditional and new tea areas.

b) Performance

For the year 2014/15, there was increased tea production to 65,900MT from 64,000MT the previous FY. However exports through the Mombasa Tea Auction reduced by 2.23% from 59,015 MT in 2013/14 to 57,700 MT in 2014/15 with corresponding reduction in export earnings from USD 110 million to USD 82.577 million over the same period due to the reduction in the export price. Just like coffee, only 6% of tea produced in Uganda is consumed locally.

Tea is such a commodity where value addition must be part of the production activities. In Uganda, there are 28 active Tea processing factories. Other new tea production areas particularly Kisoro and Kabale Districts have already achieved the minimum acreage of planted Tea,

in order to qualify for allocation of Tea processing factories. UDC has advertised. For the year 2014/15, there was increased tea production to 65,900MTs. Just like coffee, only 6% of tea produced in Uganda is consumed locally.

c) Export Performance

Exports through the Mombasa Tea Auction reduced by 2.23% from 59,015 MT in 2013/14 to 57,700 MT in 2014/15 with corresponding reduction in export earnings from USD 110 million to USD 82.577 million over the same period due to the reduction in the export price.

Inspection of Tea Nursery



The summary of the interventions, outputs and outcomes are shown in Table 21

Table 23: Tea commodity performance

Planned activities and targets	Performance against planned	Explanation of Performance/Remarks
1. Procure and distribute 3,000,000 plantlets to farmers in Nebbi and Zombo districts	A total of 8,593,688 Tea plantlets were distributed to the Nebbi (2,026,380) and Zombo (6,567,308) Districts under Operation Wealth Creation.	The funds for the output were transferred to the NAADS Secretariat to be part of operation wealth creation.
2. Produce 64,500 MT of tea	65,900 MT of tea produced	Favorable weather conditions and coming into production of tea planted over the last 3 years contributed to increased production.

3.1.3.5 Cocoa

a) Introduction

The cocoa commodity is equally promoted under the Support to Tea – Cocoa Seedlings project with the similar aim of increasing cocoa production and increase export earnings for increased household incomes.

b)

c) Production and Exports

In the year under review, there was a 9% increase in cocoa production from 22,010 MT to 24,008 in 2013/14 and 2014/15, respectively. All the cocoa produced was exported earning the country USD 67.2 million compared to USD 58 million in 2013/14. No domestic processing of cocoa into final products takes place in the country. Table 22 presents the interventions, outputs and outcomes under the cocoa commodity for the year under review.

Table 24: Cocoa Commodity Performance

Planned activities and targets	Performance against planned	Explanation of Performance/Remarks
1. Procure and distribute 3,000,000 cocoa seedlings to farmers in 15 districts	Funds for the output were transferred to the NAADS Secretariat and a total of 3,000,000 Cocoa seedlings were distributed to farmers in 15 districts	Target achieved
2. Inspect 24,000 MT of cocoa beans in 4 warehouses for export	22,008 MT of cocoa beans for export inspected in 4 warehouses in Kampala and Bundibugyo	Cocoa planted in the last 3 years came into production thus contributing to increased production.

d) Summary of Performance

- i. Increased acreage of cocoa crop in the country by 3,000 ha
- ii. 9% more cocoa beans exported.

3.1.3.6 Rice

a) Introduction

The development of the rice commodity in the sub-sector in collaboration with NARO and NAADS is supported by the Government of Uganda and the Japan International Cooperation Agency. Through the Promotion of Rice Development (PRIDE) and Commercialization of Agriculture in Northern Uganda (CANU) projects, the sub-sector targets to contribute about 20,000 MT to the national rice production by 2016.

b) Key Issues to be addressed

1. Supply of quality seeds
2. Improvement of rice quality on the market

c) Performance

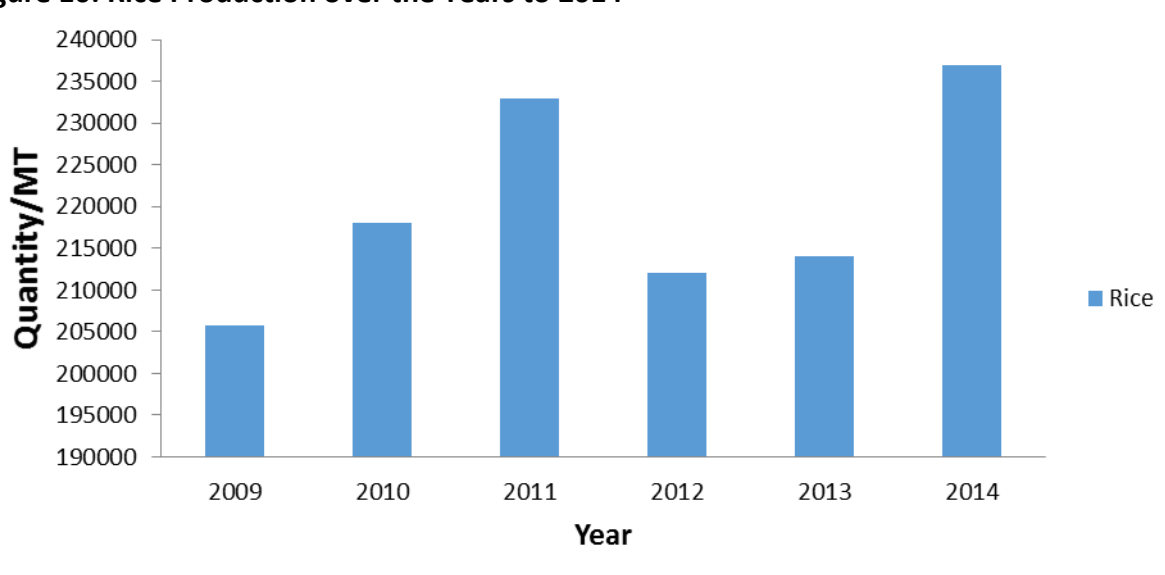
Through various sub-sector and other stakeholder interventions, rice production increased by 1% from 212,000 MT in 2012/13 to 214,000 MT in the 2013/14. Rice exports in 2013/14 rose to 72,011 MT from 69,914 MT in 2012/13 with associated increase in export earnings to USD 32.63 million from USD 31.68 million in the same period. This is a great achievement in that, 3 years the Uganda was a net importer of rice but has now achieved self-sufficiency exports the surplus.

Some key interventions, outputs and outcomes on the commodity under the PRIDE and CANU projects are shown Table 23.

Table 25: Rice Commodity Performance

Planned activities and targets	Performance against planned	Explanation of Performance/Remarks
1. Disseminate 10 MT of improved rice seed for multiplication by farmers	10 MT of certified seed disseminated to 300 farmers in 5 districts	Increased availability of seed enhanced rice production in the country.
2. Train 40 rice millers and traders on UNBS rice processing standards	35 rice millers and traders trained in northern and eastern Uganda	Training was conducted by NARO and JICA experts.

Figure 10: Rice Production over the Years to 2014



d) Summary of outcomes

- 336 FO leaders (especially the production and Marketing and Quality assurance committees) trained on Post-harvest, Store management including record keeping and product handling/packaging under CANU.

2. Registration of 9 Farmer Organizations (FOs) into cooperatives under CANU.
3. Established 46 rice technology demonstrations (Variety, Fertilizer, chemical weed control, Row planting and Operations of power tiller) under CANU.
4. 240 MT of improved rice seed produced by farmers thus increasing availability of seed

3.1.3.7 Maize, Beans, Bananas and Cassava

a) Introduction

During the year under review, besides interventions by NARO and NAADS, promotion of maize, beans, bananas and cassava development was largely private sector based. Other stakeholders that made great contribution to the promotion of these commodities include the UN World Food Programme (WFP), Food and Agricultural Organisation (FAO), United States Agency for International Development (USAID), DANIDA (aBi-Trust), Sasakawa Global-2000, International Institute of Tropical Agriculture (IITA) among other NGOs.

b) Performance

As a result of the various interventions, production increased by 0.63% in maize, 17% in beans and 4.7% in banana. A decline of 5.6% occurred in cassava production. There are no significant export quantities and values recorded yet for cassava and banana commodities.

Table 26: Performance of Maize, Beans, Cassava and Banana commodities

Commodity	Production (MT)		Exports (MT)		Export earnings (USD Million)	
	2013/14	2014/15	2013/14	2014/15	2013/14	2014/15
Maize	2,850,000	2,868,074	180,019		55.97	
Beans	941,000	1,011,435	31,874		18.11	
Cassava	2,979,911	2,812,721	-	-	-	-
Bananas	4,374,563	4,578,126	-	-	-	-

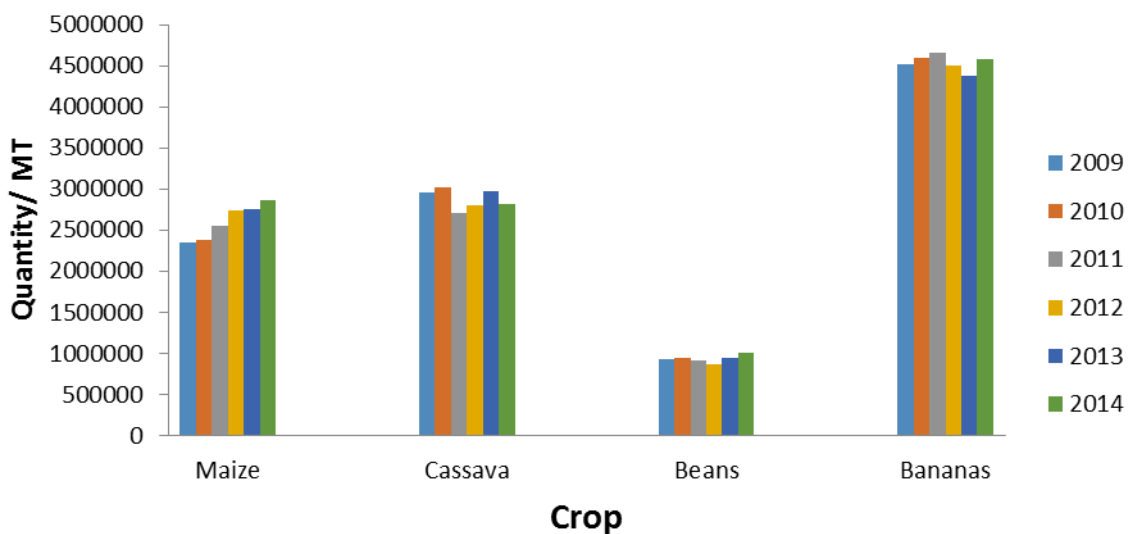
Source: UBOS Statistical abstract 2015/FAO Country Statistics

Figure 11: Cassava Cuttings



In the FY (2014/15), the sub-sector is implementing a five year Agriculture Cluster Development Project (ACDP) with support from Government of Uganda and World Bank that aims at exponentially increasing the production, productivity and export values of maize, beans, cassava in addition to rice and coffee commodities. In addition, an Agriculture Technology Transfer project (AgriTT) to enhance cassava production and productivity has taken effect this financial year with support from Governments of Uganda, China and the United Kingdom. The major activity for development of the banana commodity is the control of the banana bacterial wilt (BBW) disease that is reported under pest and diseases control section of this report.

Figure 12: Production for Maize, Cassava, Beans and Bananas

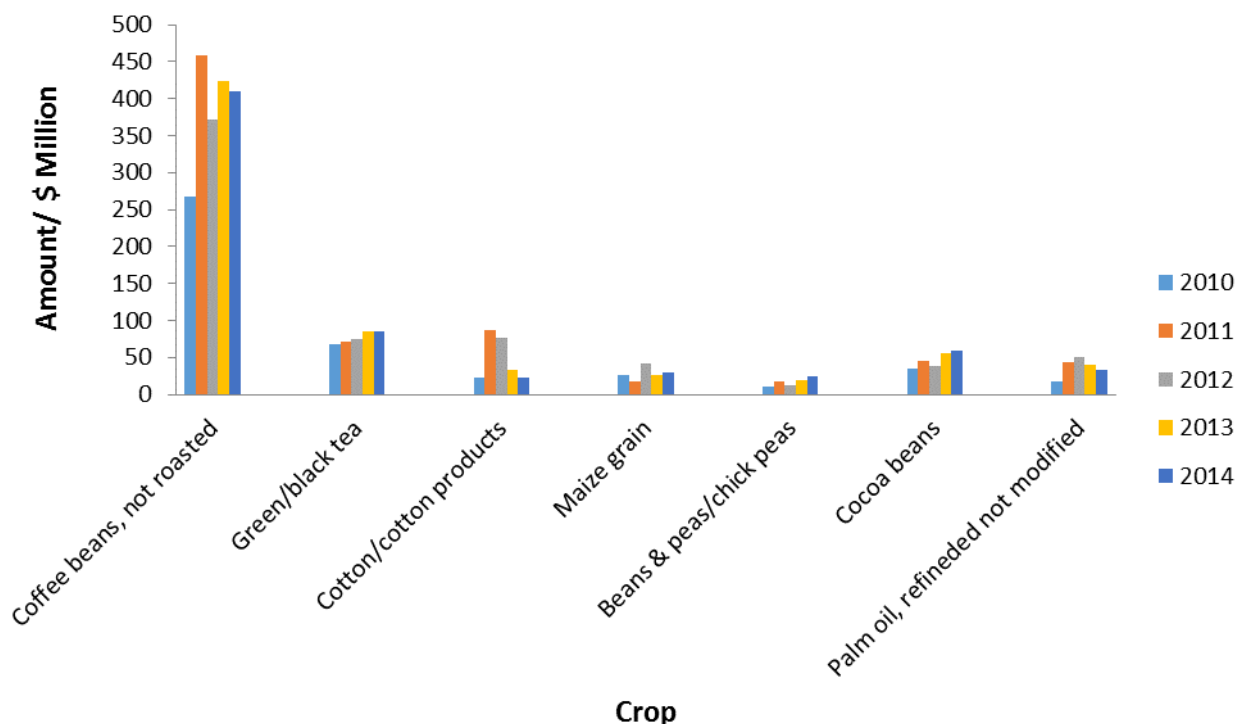


Title: Banana Tissue Culture Nursery



c) Exports

Figure 13: Value of Exports in USD for 2010 to 2014



3.1.3.8 Agricultural Services

1. *Water for agricultural production (WfAP) and Sustainable Land Management (SLM)*

a) Introduction

Dependence on rain fed agriculture amidst the increasingly unreliable rain patterns, continues to constrain development of the crop sub-sector in Uganda. Only 5% of the potential irrigable area (15,000ha out of 400,000ha) is under formal irrigation 77% of which is on private commercial plantations.

b) Issues to be addressed

The sub-sector objective, working with the Ministry of Water and Environment and other private sector players, is to increase farmers' access to water for improved agricultural production through infrastructural development and capacity building. In addition, poor land management practices have exacerbated soil fertility and moisture loss thereby negatively affecting productivity.

c) Performance

The sub-sector therefore, in collaboration with NARO, World Bank, UNDP, FAO, COMESA, CLUSA among others, supported implementation of SLM activities during the year under review. Table 25 presents the summary of the 2014/15 sub-sector performance in promotion of these services.

Table 27: Water for agricultural production (WfAP) and Sustainable Land Management (SLM)

Performance against planned		Explanation of Performance/Remarks
Establish 33 irrigation and water harvesting demonstrations in 33 districts	<ul style="list-style-type: none"> • 9 irrigation and water harvesting demonstrations established in 9 districts, • Site identification of beneficiary farmers in the selected districts 	<ul style="list-style-type: none"> • Absence of extension staff in districts greatly affected performance since there was no one to identify sites • Other works were rolled over to the following FY due to limited budgets
Planning for the establishment of New Irrigation Schemes in Bugiri and Iganga Districts under a PPP by Islamic Development Bank (IDB) and GoU	<ul style="list-style-type: none"> • Loan approved but not yet declared effective • MoUs signed between partners PPP partners identified (Busowa Farmers' Cooperative Society Ltd and Pearl Rice Uganda Ltd) and MAAIF on behalf of GoU 	<ul style="list-style-type: none"> • Land Disputes/tenure conflicts • Poor extension services
Feasibility Study for Irrigation Scheme Development Project (PISD) in Central and Eastern Uganda	<ul style="list-style-type: none"> • A Pre-feasibility Study Report for the 10 irrigation potential sites assessed: • Sironko-Acomai Wetland and Atari River wetlands (Bukedea, Bulambuli and Kween districts) An Irrigation Scheme Development Plan was formulated for each site which included an Estimated Brief Project cost, IRR and Project evaluation. • A number of gauging stations and hydro-metrological stations have been established in the target catchments to collect meteorological data for project use. 	<ul style="list-style-type: none"> • Land disputes in the project areas especially in Bulambuli district are threatening the Project's continuity •

Performance against planned		Explanation of Performance/Remarks
Water for Agricultural Support Service activities to other Directorates and Departments	<ul style="list-style-type: none"> Developed technical drawings and Bills of Quantities for completion works at 3 landing sites of Kiyindi in Buikwe District, Butiaba in Bullisa District and Lwampanga in Nakasongola District. Developed technical drawings and Bills of Quantities for completion of civil works at 4 regional fish fry centers located; Kajjansi in Wakiso, Mbale in Mbale, Bushenyi in Bushenyi and Gulu in Gulu District. Provided back up technical supervision of the construction works at 2No. Landing sites of Kiyindi and Butiaba. Provided back up technical supervision of construction works at 3 regional fish fry centers of Kajjansi, Bushenyi and Gulu. Provided design and construction supervision of water supply system for Butiaba Landing site in Bullisa. Conducted design reviews for MAAIF headquarters Supervision of consultant undertaking design of MAAIF headquarters to be accommodated at former ice plant in Bugolobi. 	<ul style="list-style-type: none"> Civil works for Bushenyi and Gulu regional fry centers were completed, Kajjansi is 50% complete. The limited funding envelope could not allow for all the works to be undertaken at once. Works for Kiyindi are complete while Butiaba is 80% complete. All these works are being funded by the government of Uganda. The limited quarterly releases have impacted on the cash flows of the procured contractors hence the delay in the completion of the contracted works. Designs for construction of MAAIF headquarters were accomplished and subsequently approved by the MAAIF TPM. However initiation construction is pending the availability of funds
Construct 80 small to medium valley tanks in district along the cattle corridor.	<ul style="list-style-type: none"> 104 valley tanks conducted in partnership with private farmers in 12 cattle corridor districts. 	<ul style="list-style-type: none"> There was overwhelming demand and more farmers were willing to co fund the construction, operators put in more time to meet the demand. More farmers were aware of the services and there was

Performance against planned		Explanation of Performance/Remarks
		<p>efficiency in demand and deployment of equipment</p> <ul style="list-style-type: none"> The operators gained experience and improved on performance this being their second year in operation. compared to the previous year
Complete rehabilitation of 3 large irrigation schemes of Agoro, Doho and Mubuku	<ul style="list-style-type: none"> Rehabilitation of Agoro, Doho and Mubuku irrigation schemes completed Olweny irrigation scheme is now under rehabilitation with GoU funding in MWE under Bridging financing fund pending approval of a Loan from ADB 	<ul style="list-style-type: none"> Rehabilitation was funded Olweny ADB though Ministry of water and Environment and handed over to MAAIF.
Establish 68 SLM technology demonstration in the cattle corridor districts	<ul style="list-style-type: none"> 123 demonstrations for dissemination of SLM technologies established in 11 cattle corridor districts 	<ul style="list-style-type: none"> There was huge community interest and support by other stakeholders.
Train 2,000 farmers and extension staff in 16 districts in conservation agriculture	<ul style="list-style-type: none"> 4,500 farmers trained in conservation agriculture and staff technically backstopped in 11 districts 	<ul style="list-style-type: none"> Due to promotion of mechanized tillage using rippers, farmers' response is high and acreage under conservation farming will subsequently increase.
Supervision of Sustainable Land Management (SLM) Projects in 6 Uganda cattle corridor districts where implementation is jointly done by MAAIF and UNDP.	<ul style="list-style-type: none"> Supervised in 6 districts of Kamuli, Kaliro, Nakasongora, Nakaseke, Lyantonde and sembabule. 	<ul style="list-style-type: none">
Promoting and Scaling up	<ul style="list-style-type: none"> Established 800 Demonstrations sites in Sustainable Land 	<ul style="list-style-type: none"> Sustainable Land Management and Conservation Agriculture

Performance against planned		Explanation of Performance/Remarks
Sustainable Land Management and Conservation Agriculture practices.	Management (SLM), soil and water conservation structures, Climate Smart Agriculture (CSA) technologies, Conservation Agriculture practices, in field and road side water harvesting, in 24 districts of Lyantonde, Nakaseke, Sembabule, Nakasongola, Kaliro, Kamuli, Buyende, Namutumba, Bugiri, Busia, Budaka, Manafa Bulambuli, Mbale, Mukono, Mubende, Masaka, Mbarara, Kiruhura, Isingiro, Kabale, Kisoro, Rukungiri and Kanungu	Demonstrations sites establishment and Scaling up of best practices were done by MAAIF in partnership with UNDP in targeted districts

d) Summary of outcomes

1. Awareness and capacity for water for agricultural production enhanced in 33 districts
2. Availability of water for livestock increased by 155,160cubic meters
3. 3,052 ha of irrigated land rehabilitated for enhanced crop production and productivity
4. Degraded lands being improved and yields on demonstrations increased by between 20 – 200%
5. 6,500 acres of land under conservation agriculture in the 11 districts
6. Degraded lands being improved and yields on demonstrations increased by between 20 – 200%

2. Agricultural mechanization

a) Introduction

The low use of modern agricultural machinery is one of the key constraints to increasing crop production. The continued use of the hand hoe implies that not much arable land can be opened more so in time to match with the variable rain seasons. The sub-sector objective therefore, is to support and promote timely and efficient farm operations while ensuring integration of primary processing and market linkages.

b) Issues to be addressed

Using the heavy earth moving equipment acquired by the Ministry with support from JICA, the sub-sector pilot activities in this area during 2014/15 are as presented in table 26.

Table 28: Performance of Agriculture mechanization sub-sector

Planned activities and targets	Performance against planned	Explanation of Performance/Remarks
1. Support farmers open 1,400 acres of farm land in 10 districts	1,652 acres of farmland opened for farmers in 10 districts	There was overwhelming demand for the services by farmers.
2. Construct 25 km of farm roads in 8 districts	28 farm roads totaling to 82 km constructed in 8 districts	There was overwhelming demand for the services by farmers

c) Summary of outcomes

- i. More farmland brought into production contributing to increased crop production
- ii. Farm road network and access to market linkage improved.

3. Pest and Disease Control**a) Introduction**

Pests and diseases, especially of epidemic nature contribute close to 50% of annual crop losses and thus negatively affect crop production and productivity. Under the Department of Crop Protection, the sub-sector objective is to support sustainable crop pests and diseases control for improved crop production and productivity. In a bid to increase disease and pest control capacity in the country, the sub-sector has so far trained staff in 77 districts in the operation of Mobile Plant Clinics, pests and diseases diagnostics and safe use of pesticides.

b) Performance

During the FY 2014/15, the epidemic pests and diseases that occurred and control measures undertaken are hereby reported (Table 27).

Table 29: Pest/Diseases recorded and control measures undertaken in 2014/2015

Disease/Pest	Commodity and area(s) affected	Control measures undertaken	Remarks
1 Banana Bacterial Wilt (BBW)	Bananas throughout the country	District Staff from 63 affected districts, and 40 Agricultural Inspectors were trained in BBW control BBW control bye-laws formulated in 63 districts and were backed up by MAAIF Teams	Reduced disease prevalence contributing to increased banana production from 4.374 million MT to 4.578 million MT (increment in output by 4.7%)

Disease/Pest	Commodity and area(s) affected	Control measures undertaken	Remarks
2 Coffee leaf rust	Arabica coffee in Bugisu and Sebei sub-regions	Follow-up activities as support supervision of the 13 districts that received demonstration materials	Disease controlled, current prevalence estimated at 9.6%
3 Giant Looper and sweet potato caterpillars	Lake Victoria basin districts and 30 Sweet potato growing districts	4,000 liters of Cypermethrin 5% EC, 5000 litres of Dimethoate and 76 Motorized pumps were procured and supplied to the affected districts	Pests controlled
4 Quelea birds	Rice and sorghum in Kapchorwa, Kween and Bugiri districts	20 MAAIF and District Staff from Eastern Uganda trained on management and control of Quelea	Quelea birds being controlled. Over 4000 acres of rice and 1000 acres of sorghum saved from bird destruction
5 Maize Lethal Necrosis	Maize in eastern and western Uganda	Conducted training of over 100 LG staff, developed and disseminated a training manual, drafted an MLN strategy and conducted continuous surveillance, procured assorted ELISA kits for lab. Tests of MLN	MLN controlled in 16 affected districts, at least maize production increased by 0.63%
6 False Codling moth	9 Districts	Conducted surveillance and provided technical guidance on control of FCM in capsicum in 9 districts	Pest controlled. Interceptions reduced from over 15 to 2 in a month
7 Soil Testing kits procured	All Districts	214 Soil Testing kits procured and distributed to DAOs	Soil fertility issues being addressed
8 Mobile Plant Clinic equipment	8 Districts	8 sets of Mobile plant clinic equipment procured and distributed to 8 districts of Eastern and Northern Uganda	Guidance on plant pests and diseases offered in proximity to the farmer

4. Agro-Inputs Certification Services

a) Introduction

The sub-sector through the National Seed Certification Services (NSCS), Phytosanitary and Quarantine and agrochemicals control divisions of the Department of Crop Regulation and Certification aims at ensuring access to and use of improved agricultural inputs (seed and planting materials, fertilizers, herbicides, insecticides and fungicides) by farmers. The NSCS achieves this through regular seed field, factory and market inspections and issuance of quality assurance labels/tags. The Phytosanitary unit facilitates the importation and exportation of plants and plant materials through inspection and issuance of import permits and Phytosanitary certificates. On the other hand, the agrochemicals control unit ensures quality of fertilizers and pesticides imported and sold in the market through inspections, testing and issuance of quality certificates.

b) Performance

During FY 2014/15, the following were achieved:-

- i. A total of 14,000 MT of crop seed was certified for sale to farmers. It is however worthy noting that, this amount only formed about 20% of the over 25,000 MT seed demand in the country.
- ii. A total of 12,408 Phytosanitary certificates compared to 14,636 issued in 2013/14 FY beyond the planned 10,000 showing a decrease in exports. This is partly attributed to challenges in Fruits and vegetables of the presence of harmful organisms.
- iii. A total of 14,000 MT of crop seed was certified for sale to farmers.
- iv. 902 import permits were issued compared to 768 import permits in 2013/14 FY against the planned 800 permits were issued. 252 Form X compared to 313 in 2013/14 FY (Form X is issued for export plant materials of unknown species/ health status- mainly samples).
- v. About 60,000 MT of fertilizers were imported compared to 50,000 MT in 2013/14 FY
- vi. 5.55 million liters of herbicides compared to 4.5 million liters in 2013/14 FY were imported
- vii. 4.02 million liters/kilograms of fungicides compared to 3.07 million liters in 2013/14 FY were imported
- viii. 3.1 million liters of insecticides compared to 1.5 million liters in 2013/14 FY, were imported into the country.

None-the-less, application of these inputs by farmers in Uganda still remains very low in addition to the quality challenges of the same in the market.

5. Policies, Laws and Regulations

To contribute to the creation of an enabling environment for enhancing the performance of the sub-sector, a number of policies and regulations were formulated and/or finalized during the year under review as follows:

- i. The *Plant Variety Protection Act, 2014* was enacted by Parliament into a Plant Protection Act (2014). Formulation of the Plant Variety Protection Regulations is on-going.
- ii. The *Plant Protection and Health Act, 2015* was enacted by Parliament and assented to by HE The president on 11/2/2015

- iii. The National Fertilizer Policy was finalized. The National Fertilizer Strategy was adopted by MAAIF Top Policy Management (TPM) and was also finalized. The Fertilizer Regulations were too finalized. The three documents were submitted to Ministry of Finance, Planning and Economic Development and are awaiting Certificate of Financial Implications before approval.

The drafting of the Seed Policy was finalized for submission to Cabinet. The Seed Regulations were finalized and awaiting gazetting.

6. Food and Nutrition Security

a) Introduction

Despite the favorable climate and soils, Uganda still grapples with unsustainably high levels of under-nutrition. Latest UDHS statistics indicate the following:-

- i. 33% of children under 5 years stunted:-
 - o 36% stunting in rural & 19% in urban areas
 - o Karamoja (44%) & Western Uganda (42%) have highest stunting levels & Kampala (13%) has lowest levels.

As part of the actions to reverse the high levels of under-nutrition, a Multi-Sector Food & Nutrition Project supported by the Global Agriculture & Food Security Programme (GAFSP) with the main objective of increasing production & consumption of micronutrient-rich foods in farmer households is slated to commence activities by the end of this calendar year (2015).

b) Key issues:

- i. Establishing the Food and Nutrition Situation in the country to guide follow up action
- ii. Production of I.E.C materials on Food and Nutrition for Extension Workers

Table 30: Performance of the sector under food and nutrition security (2014/15)

Planned activities and targets	Performance against planned	Explanation of Performance/Remarks
<p>Carry out Food and Nutrition Security Surveillance in all the four regions of Uganda (East, West, Central and Northern Regions) & Develop food security early warning messages</p>	<p>Surveillance carried out in districts of Kiboga, Luwero, Kyankwanzi, Nakasongola (Central)</p> <p>Buhweju, Kamwenge, Lubirizi, Kiruhura (West)</p> <p>Kaliro, Jinja (East)</p> <p>Karamoja Sub-region including Kabong, Kotido, Napak, Moroto, Amudat, Nakapiripirti, Abim</p> <p>Pader, Gulu, Amuru, Mwoya, Lamwo, Alebtong (Northern Region).</p> <p>By the end of FY 2014/15, apart from Karamoja region that was in a food security crisis, the rest of the country was generally food secure.</p> <p>Early warning messages developed every season & disseminated to stakeholders</p>	<p>Target achieved</p> <p>Karamoja sub-region covered with support of FAO</p>
<p>Develop Food and Nutrition handbook (FNH) for extension workers</p>	<p>FNH finalized and due for printing and launching</p> <p>Draft guidelines on nutrition sensitive enterprise mixes also produced & slated to be complete by November 2015</p>	<p>Target over achieved with support of USAID FANTA III Project</p>

3.1.4 Challenges

In the course of implementing various interventions to spur the sub-sector development in the year under review, a number of challenges were observed. In Table 15, some of the key challenges are presented together with the existing and/or proposed mitigation strategies.

Table 31: Challenges faced and mitigation strategies

Challenge	Mitigation strategies
1. Low domestic consumption of coffee affecting price stability and household incomes	Sub-sector developing a strategy for promoting local coffee processing and consumption
2. Low domestic value addition affected level of local consumption of cotton lint hence household incomes	Recommendations of the National Textile Policy (2009) to be fast-tracked.
3. Losses of oil palm seedlings to not so well known pests and diseases affected increase in area planted	More research on oil palm pests and diseases to be undertaken
4. Limited capacity at District Local Governments for implementation of WfAP interventions constrains adoption, up-scaling and sustainability of technologies	Positions for Agricultural Engineers in Districts to be filled
5. Low domestic consumption and dependence on the Mombasa exchange affects prices and incomes from Tea commodity	Domestic consumption and branding Ugandan tea to be promoted
6. Lack of domestic value addition on cocoa beans affects price and incomes	Avenues for local cocoa processing to be explored.
7. Low availability and quality of agro-inputs in the market affecting subsector performance	<ul style="list-style-type: none"> - Avenues for increased quality seed production being sought (prisons, army & other public land) - Local production of fertilizers being initiated in Tororo - Agro-input regulations and enforcement mechanisms being strengthened
8. Poor postharvest handling, storage and market linkages for maize, rice, beans and cassava) had negative impact on performance	<ul style="list-style-type: none"> - The 5 year cluster development project that commenced this FY is specifically designed to address these challenges - PPPs with the private sector in this area to be supported.

3.1.5 Responses to JASAR 2014 Recommendations and Agreed Actions

During the JASAR of last year some issues that required the sub-sector responses were raised. Table 14, presents the issues and responses provided.

Table 32: JASAR 2014 Issues and Responses

Issue	Response
1. A weak Extension System due to shortage of Extension Workers in LGs	<ul style="list-style-type: none"> • MAAIF has put in place a Directorate of Extension Services to coordinate and ensure effective implementation of the Single Spine Extension System

Issue	Response
2. Unclear mechanism for accessing MAAIF machinery to desilt valley dams and excavate fish ponds	<ul style="list-style-type: none"> Guidelines to access the heavy machinery are in place and being implemented
3. Continued existence of fake inputs on the market	<ul style="list-style-type: none"> MAAIF has put in place Police that is backing up enforcement activities More inspectors have been recruited To fill the gap in seed production, MAAIF has engaged Prisons to produce seed on their farms. MAAIF is supporting PPPs with seed producers on how they can do self-policing through codes of practice.

3.2 Fisheries Sub Sector Performance

3.2.1 Introduction

Fisheries in Uganda is broadly from capture and aquaculture and the potential is high in terms of resource base (water area - 18% of Uganda’s land surface; over 5,650km² of the land good for aquaculture, over 250 valuable fish species and good climatic conditions). Fisheries management and development in Uganda is guided by the National Fisheries Policy (2004), whose sub sector Vision is “an ensured sustainable exploitation of the fishery resources at the highest possible levels, thereby maintaining fish availability for both present and future generations without degrading the environment

Figure 14: Water Bodies



Fish is one of the priority commodities in the agricultural sector which had a planned target of increasing capture fisheries production by 26% from 420,000 in 2010 to 530,000 by 2015 (MAAIF DSIP). The aquaculture production is projected at 300,000 metric tonnes by 2016. Underpinned in the DSIP is the need to reverse the dwindling fish catches by strengthening regulation and controls and building capacity of institutions with strong collaborative and networking mechanism.

Fisheries continues to be an important commodity contributing 3% to national GDP and 12% to agricultural GDP of Uganda. It employs up to 1.2 million people and accounts for over 50% of animal protein food with a per capita consumption of 10 kg.

3.2.2 Mandate and Functions

The mandate is to ensure the sustainability of the fisheries resources at optimal levels and maintain availability for present and future generations. The functions include:-

- i. Drafting and reviewing policies and standards governing the fisheries sub-sector
- ii. Preparing fisheries regulations and guidelines and reviewing fisheries legislation
- iii. Drafting and reviewing national and zonal plans and strategies for the fisheries sub-sector.
- iv. Advising on improved techniques of fish handling, processing, preservation, storage, transportation and marketing as well as fisheries development.
- v. Advising on the application of new skills and more efficient and effective production techniques for fish farming e.g. site selection, pond design, pond construction, stocking, cropping and management.
- vi. Encouraging use of improved fishing gear and methods with particular emphasis on mechanization of fishing canoes and methods.
- vii. Providing advice on the processing and handling of fish for export.
- viii. Collecting, processing and maintaining national data and information on the fisheries sub-sector
- ix. Coordination with neighboring countries with regard to fishing activities on shared waters.
- x. Monitoring and protecting the health of fish in the national water bodies, controlling aquatic activities and conserving fish species.
- xi. Controlling and managing fisheries epidemics and disasters.
- xii. Management and enforcement of fisheries regulations in order to ensure orderly exploitation of fisheries resources.
- xiii. Inspecting the activities of fish processing and marketing firms for compliance with national standards.
- xiv. Halting, reducing and controlling the geographical spread and levels of infestation by principal weeds within all waters inhabited by fish, using environmentally safe techniques.
- xv. Monitoring, inspecting, evaluating and coordinating fisheries extension activities in the districts.

3.2.3 Key issues that the interventions were addressing

Presently, the key issues in fisheries include:-

- i. Declining fish stocks of major commercial fish species
- ii. Post-harvest losses resulting from inadequate fish handling facilities and poor hygiene.
- iii. Increased use of illegal fishing gears and methods.
- iv. Increased capture and trade in immature fish;
- v. Over capacity leading to increased fishing pressure.
- vi. Inadequate funding and understaffing.
- vii. Co-management institutions and the recently approved Fisheries police tasked with enforcement lack capacity building
- viii. Inadequate equipment for on-lake and on-land enforcement
- ix. Obsolete fisheries policies, laws and regulations.

In the year 2014/2015, government planned to undertake strategic interventions to address the above issues with the aim of increasing and sustaining fisheries production. These strategic interventions or key issues included:-

- i. Creating an enabling environment for increasing fish production.
- ii. Promoting recovery of depleted stocks of commercial fish species.
- iii. Promoting aquaculture to a commercial level.
- iv. Developing the fishery of small pelagic fishes.

3.2.4 Target versus achieved

Targets, activities and outputs for the year 2014/2015 were identified and the following achievements were registered against planned targets as summarized in the table below.

Table 33: Planned targets versus achievements 2014/2015

Key Intervention Areas	Planned Actions	Performance (Outputs)	Remarks
Enabling Environment	Reviewing, updating and finalizing one Fisheries Policy; 2004; Fisheries Sector Strategic Plan (FSSP 2015 to 2018); Developing 2 guidelines for addressing other policies	The National Fisheries Policy 2004 reviewed and Draft National Fisheries Policy 2014 developed Two (2) guidelines developed: 1 for cage farming and 1 for management of fish breeding areas	Continuation of the process awaits further funding

Key Intervention Areas	Planned Actions	Performance (Outputs)	Remarks
	Developing regulations regarding aquaculture and reviewing quality assurance rules	One BMU Statute of 2003 reviewed, Aquaculture Rules of 2003 reviewed and Quality Assurance Rules of 2008 reviewed and Cleared by Solicitor General	Finalization process ongoing
	Developing specific National Policy on Aquaculture	National Task Force for development of a specific Aquaculture Policy constituted. Policy development process initiated towards creating enabling environment to spur commercial aquaculture investments.	NEPAD to provide support
Promoting recovery of depleted stocks of the large commercial fishes	Issue 10,000 licenses for all fishing activities annually	A total of 2,508 licenses were issued and 3,343 fishing FVIPs	Licensing needs to be extended nearer to the people (Mobile Licensing System). Most fishers are illiterate and unwilling to transact business with banks.
	Develop 5 designs of logbooks to be issued to boat owners on different water bodies	5 designs of logbooks were designed for each of the Lakes: Kyoga, Victoria, Albert, Edward and George	
	Establishing one regional management structure to improve fisheries management	One structure is yet to be established under the LEAF project on L.Albert.	The delay was occasioned by lack of funds. For now, a

Key Intervention Areas	Planned Actions	Performance (Outputs)	Remarks
	on Lakes Albert and Edward (Shared with DRC)		request for approval of the Loan was submitted and is before Parliament
	Maintain one updated fisheries database through routine collection of Fisheries Data and information on the five major water bodies	One central database was maintained after collection of frame survey (FS) data on Lake Victoria and catch Assessment (CAS) Surveys on Lakes Victoria, Albert and George/Edward. Fish marketing data for local and regional trade collected from border areas and major markets.	This was made possible through collaboration with NaFRRI, Local Governments, UFPEA, UBOS, URA, NEMA and LVFO and Ministry of Water and Environment
	Collect and maintain a database on international fish exports	Data on Fish exports to international markets collected and analyzed.	Made possible through collaboration with URA and establishment of the e-certification system (TRACES)
	Develop 3 management plans for Tilapia, Nile perch and Mukene	Three (3)2 species specific management plans were developed on Lake Victoria.	Collaboration with LVFO
	Conduct 120 quarterly inspections of 18 fish processing plants and 32 gazetted landing sites for compliance to quality assurance	60 Quarterly inspections to 9 fish processing factories, and 32 gazetted fish landing sites conducted	Performance was lower than target because 9 fish processing plants never

Key Intervention Areas	Planned Actions	Performance (Outputs)	Remarks
	regulations		requested for license in 2014/2015.
	Issue 3,500 certificates for fish exports to international markets	3,096 certificates were issued for consignments totaling to 17,597 tons valued at US\$ 134.791 million	Target not achieved because fish exports slightly declined due to low catches of large commercial fish species.
	Identify and register 30 fish maw processors.	40 fish maw processors were identified and 14 were registered.	The low registration was because other traders never applied for license.
	Develop one guideline for licensing of fish maw traders	One guideline was developed.	Guideline being used to streamline fish maw trade
	Inspect and issue 300 health certificates for fish transport trucks	Inspected 450 trucks and 433 health Certificates were issued	The target was over-shot because more trucks turned up than targeted may be due to compliance enforcement
	Support to operations of the Uganda Fisheries Laboratory through	One AC, 1 Refrigerator, 1 deep freezer, 1 incubator, 3 desktop	Funding was obtained from MTIC under

Key Intervention Areas	Planned Actions	Performance (Outputs)	Remarks
	procurement of assorted equipment and maintainance of equipment	computers, chemicals and consumables. Maintained and repaired other laboratory equipment	QUISP in areas of calibration of equipment
	Establish and support 8 quarterly operations of the agriculture Enforcement Police for regulatory purposes	Agriculture Police established and 12 operations were supported on Lakes Kyoga, Albert and Victoria.	Target surpassed due to external funding through FAO- EU under Smartfish programme
	Inspect 40 consignments of imported fishing gears	37 consignments were inspected and 33 were cleared.	Good collaboration with URA
	Support operations of 10 border posts inspectors for fisheries regulation	10 border post inspectors deployed and supported to man fish exit points of Entebbe International Airport, Mutukula, Busia, Malaba, Mpondwe, Vura, Elegu, and Katuna to work closely with URA for compliance to regional fish trade and fisheries regulations.	Funding availed through recurrent expenditure
	Managing the health of the fish habitat by removing 60,000 tonnes of aquatic	25,730 tonnes of weed mechanically removed at Strategic sites of	Limited funding did not enable covering the 5

Key Intervention Areas	Planned Actions	Performance (Outputs)	Remarks
	weeds from 5 affected water bodies	importance on 3 water bodies namely: River Kagera mouth and Port Bell on Lake Victoria; Mone and Kikooge landing sites on Lake Kyoga and Wanseko landing site on Lake Albert.	water bodies targeted. Financial support accessed through LVEMPII and Uganda-Egypt Aquatic Weed Control Project.
	Map and gazette 40 fish breeding and nursery areas.	25 Fish Breeding Areas (FBAs) mapped for gazetting.	Long consultative processes to generate community consensus caused under performance
	Implement and promote 50 alternative community demand driven sub-programs under LVEMP.	27 fisheries related Community Demand Driven (CDDs) Sub-projects being implemented in collaboration with MWE	Funded under LVEMP II
Promoting Aquaculture to a Commercial level.	Establish 3 infrastructural developments to promote fish seed production and the 4 regional fry centers at Kajjansi, Mbale, Gulu and Bushenyi.	Construction and fitting of hatchery equipment of 2 Infrastructural developments initiated and in advanced stages at Bushenyi and Gulu	
	Promote intensive aquaculture production systems like cages and tanks; and improve pond culture management systems	Promoted and increased cage enterprises on L. Victoria from 1,388 cages in 2013 to 2,000 in 2014. Increased fish production by about	Pond culture declined from 27,000 in 2013 to 26,527 in 2014 mainly due to

Key Intervention Areas	Planned Actions	Performance (Outputs)	Remarks
		3,155 tons from cage farms.	inadquate seed supply and expensive fish feeds but the average pond size is gradually increasing in the range of 600-1000m ²
	Provide a stimulus package for small scale farmers covering 5 farmers per region.	A total of 90,000 fish fingerlings (seed) were distributed to 3 farmers with each getting 30,000 in the districts of Luwero, Iganga and Kisoro.	
	Provision of water for aquaculture production.	Five (5) rainwater harvesting dam each of capacity 7,500 m ³ constructed in Kiboga (2), Wakiso (1) and Adjumani (2). Constructed one (1) Fish farm with 4 ponds each 2,700m ² in Wakiso District in Central Uganda.	Activities funded by the Egyptian Grant through the Uganda Egypt Aquatic Weed Control Project.
	Identify potential aquaculture parks production zones	Site suitability (feasibility, design and costing) studies were conducted and 1 land based site in Apac and 2 water based sites in Kalangala (Mweena and Kitobo) selected for development of aquaculture parks. 14 dams identified for fish stocking with	

Key Intervention Areas	Planned Actions	Performance (Outputs)	Remarks
		production capacity of each dam at 15tones annually thus 210 tones, given average price of UGX 6 million per ton, this intervention will creat gross annual income of UGX 1.47 Billions.	
	Promotion of PPP in fisheries through signing of MoUs.	One MoU between Ferdsult and Kabarole Local Govt was signed to stock 20 minor crater lakes estimated to yield 990 metric tons per annum valued at UGX 5.9 Billions. One PPP framework in place for fish feed production	Private firms hesitant to invest in fisheries. Ferdsult signed the MoU as part of Cooperate Social Responsibility
<i>Developing the Fishery of Small Pelagic Fishes.</i>	Complete civil works and equipment at 4 fish landing sites of Kiyindi, Lwampanga, Butiaba and Bukungu.	Works on completion of Kiyindi landing site ongoing to improve site roads and park yards, walk ways, gates, fencing, landscaping and connection of ice plants to UMEME as a way of operationaling the 2 landing site facilities for quality fish handling.	
	Construct 10 drying racks for mukene	A total of 8 mukene drying racks constructed: 4 at Walukuba (Buliisa) and 4 at Kagwara in Serere	The racks supporting women groups to add value and increase earnings

Key Intervention Areas	Planned Actions	Performance (Outputs)	Remarks
	Install 2 water reservoir tanks for ice plants at Butiaba and Nakasongola	Installed 2 water reservoir tanks on steel fabricated towers for the ice plants at Butiaba landing site and Nakasongora Town Council.	
	Promote use of suitable craft for exploiting small pelagic fishes by providing 3 catamaran boats as demonstration.	Provided 2 demonstration catamaran boats to Buvuma and Jinja Local Governments to promote deep water catamaran fishing technology under an agreed MoU.	Catamaran boats propoting offshore fishing that is more sustainable

3.2.5 Production in 2014/15 as compared to 2013/14

Fish production from both capture and aquaculture increased by 10.7% from 517,313 MT in 2013 to 572,759MT in 2014 (Chart 1 below). Accordingly, total fish value increased by 25.7% from UGX 2,313 billion in 2013 to 2,908 billion in 2014. Capture fisheries production remained the major source of fish contributing 80% of the total fish production. There was a 10.1% increase in capture fisheries production from 419,250 MT in 2013/14 to 461,730MT in 2014/15. The main commercial species caught are Nile perch, Tilapia and Mukene. In the same period, aquaculture production increased by 13.2% from 98,063 in 2013/14 to 111,033 in 2014/15 (Chart 2). The main fish species farmed are Tilapia contributing 66%; Catfish 33.6% and Mirror carp 0.3%. There is increasing investment in intensive water based production systems notably the cage culture with 2,000 cages established on L. Victoria alone compared to 1,388 in 2013. Annual estimated production has increased to 3,155tons from 1,739.4MT in 2013. The fish produced was used for consumption on the local, regional and international markets.

Figure 15: Enforcing the FISH ACT & statutory instrument



At the regional level, fish trade was 19,408 MT valued at US\$ 55.5 million in 2014. However data for 2013 was not available for comparison.

Figure 16: Fish production trends from capture fisheries and aquaculture 2004 – 2014

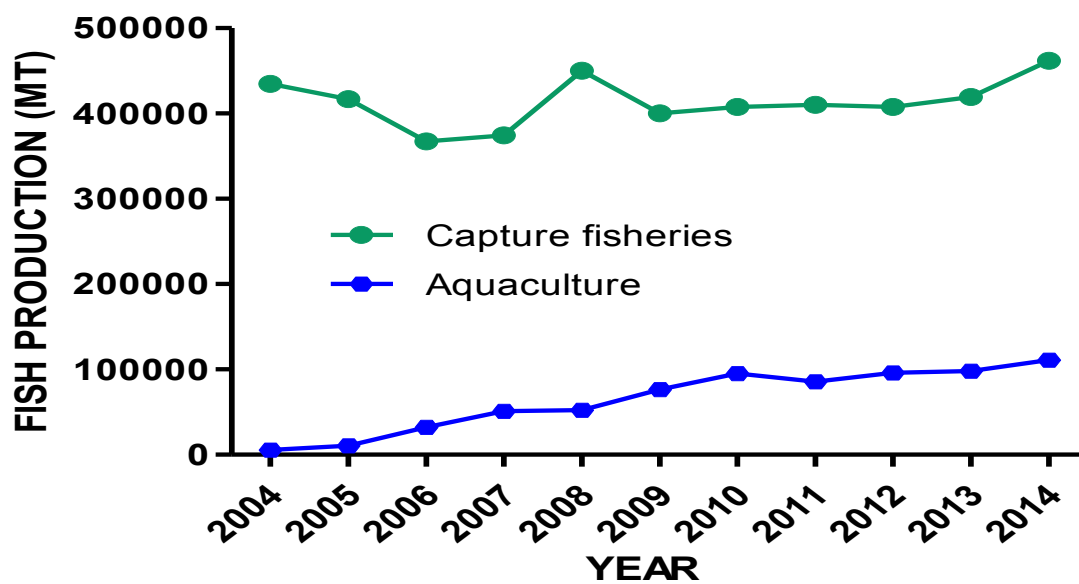
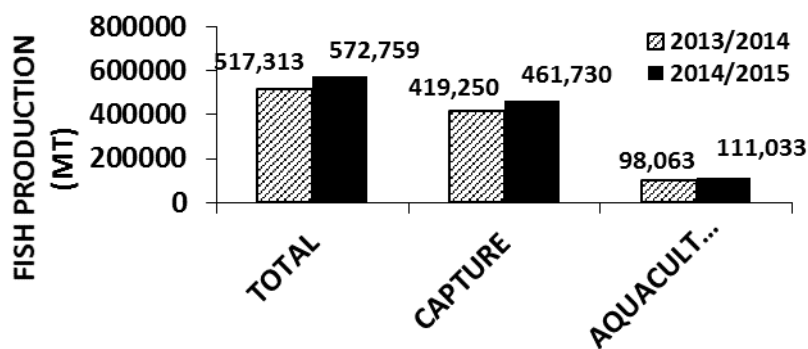


Figure 17: Comparison of fish Production in 2013/2014 and 2014/2015

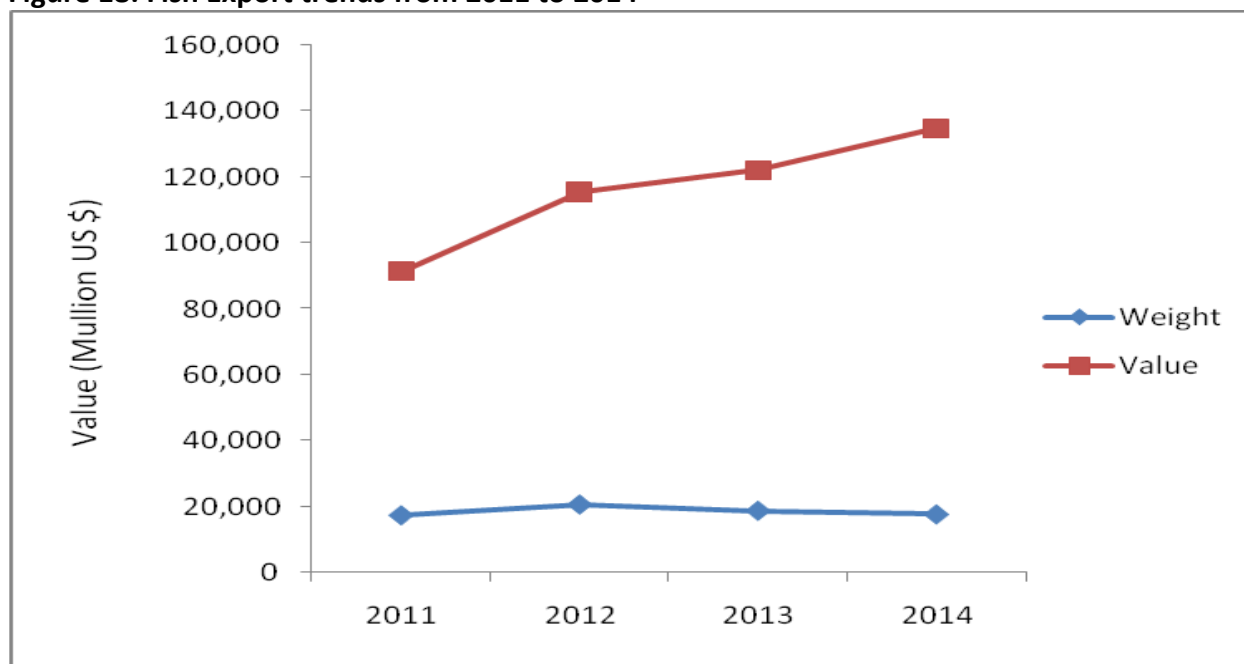


(Source: MAAIF-2015).

3.2.6 Exports in 2014/15 as compared to 2013/14

Between 2011 and 2014, there has been an increase in the value of international fish exports while the tonnage exported has remained relatively stable as shown in Figure 18.

Figure 18: Fish Export trends from 2011 to 2014

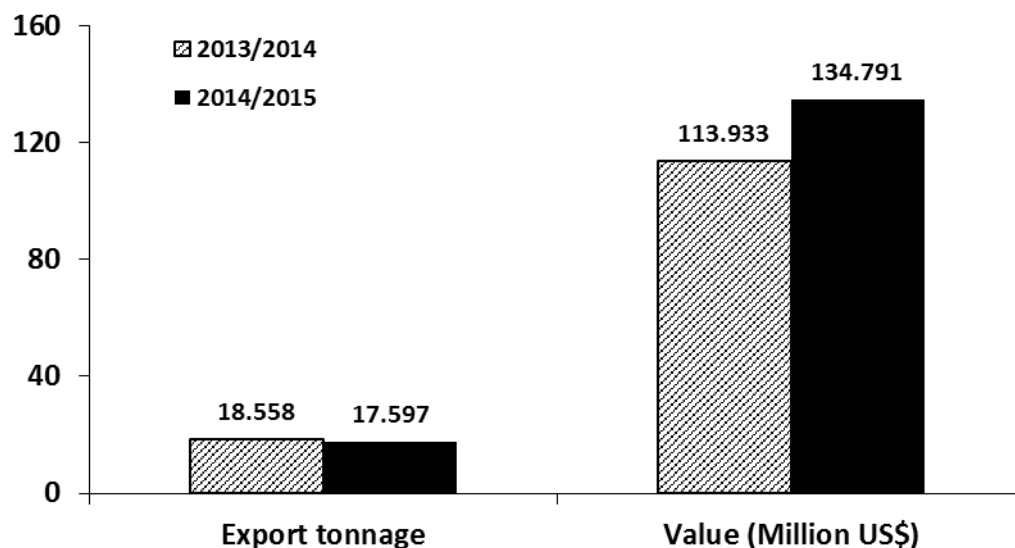


(Source: MAAIF-2015).

In the year 2014/15, exports of Nile perch fish products to international markets were 17,597 compared to 18.558MT in 2013/14. However, despite reduction of export tonnage in 2014/15, the export value in 2014/15 (US\$ 134.791 million) was 18.3% higher than in 2013/14 (113.933 million dollars) as shown in chart 4.

The increase in value of export despite reduction in tonnage is explained by increased exports of the highly valuable fish maws.

Figure 19: Comparison of fish export tonnage and value between 2013/14 and 2014/15.



3.2.7 Responses to JASAR 2014 Recommendations and Agreed Actions

Table 34: Responses to JASAR 2014 Recommendations and Agreed Actions

Issue	Recommended action	Action taken
Uncoordinated enforcement initiatives in the fisheries sector.	Develop guidelines to streamline enforcement.	Standard operating procedures for enforcement developed.
Absence of an evidence based fisheries database.	Agriculture Police Operationalized. Gazettement of enforcement officers Border Fish inspection service provided data on regional trade Building on synergies with URA ASCYUDA system Implement E- certification system- TRACES	Fisheries surveys conducted on capture fisheries. Establishments of EFMIS- Electronic Fish market information system by SMARTFISH Project

3.2.8 Challenges

Table 35: Challenges

Challenge	Mitigation strategies
Continued decline in the large commercial fish species.	Promotion strategies to reverse the declining stocks.
Inadequate aquaculture data and unsustainable financing for fisheries resource monitoring.	An aquaculture census required as part of fisheries framework implementation plans.
Invasion by the new breed of weed (Kariba Weed).	National Task Force established, Mechanical control undertaken on Lake Kyoga. Development of Financial proposals to implement appropriate control technologies for the new weed including importation of biological control agents from Lake Kariba.
Limited PP arrangement in aquaculture	Promote PPP and concentrate aquaculture production through aquaculture parks.

3.2.9 Stakeholder participation in Sub sector activities

The fisheries subsector has received participation from various stakeholders which has contributed to the smooth running of its activities. The Egyptian government working with government of Uganda have funded efforts to enable the removal of aquatic weeds especially water hyacinth mainly on Lakes Victoria, Kyoga, Albert and on River Kagera.

Under the enforcement unit, the Food and Agricultural Organisation in conjunction with the Indian Ocean Commission have supported monitoring, control and surveillance operations under the Smart Fish programmes. In addition various equipment have been procured for the Uganda Fisheries Laboratory towards its accreditation. Besides, in collaboration with Uganda Revenue Authority, the Directorate of Fisheries Resources has been able to reduce the importation of illegal fishing gears into the country by 90%. This has been possible through training URA staff at entry points to make them aware of which fishing gears are legal for importation. Additionally, URA has allowed fisheries inspectors at border posts to access ASCYUDA WORLD, software that enables monitoring of consignments being imported or exported. In addition, URA has included the various fisheries licenses on its e-licensing system which has helped to eliminate problems previously encountered helping in the collection of Non Tax Revenue including the fish levy.

Working together with the Uganda Fish Processors and Exporters Association (UFPEA) and Association of Fish exporters and Lake Users (AFALU) self-monitoring systems and a National Fisheries Enforcement Task Force was established to help check illegal activities

Performance as related to commercialization for wealth creation.

As noted above, part of the vision of the fisheries subsector is to increase fish availability in a sustainable manner. Our data shows that both capture fisheries and aquaculture production are on an increasing trend. This implies that more fish is becoming more available for sale and

consumption. This is a vital aspect in improving incomes and wellbeing of the humans. The value addition initiatives are helping artisan women processors and the youth to increase their incomes.

In execution of the interventions undertaken during 2014/15, the fisheries sector realized a 10.7% increase in total fish production from both capture fisheries and aquaculture. This saw production of an extra 55,446MT estimated at extra 595 billion UGX. The end-points of this fish include sale and consumption thus contributing to goals of nutrition, food security and increasing household incomes which are important components of wealth creation.

Under aquaculture, the sector has registered a transition from small earthen ponds to High density cages. These have been supplemented by establishment of various infrastructure which will enable increased production of fish seed to support the needs of fish farmers. The above transition is shifting the direction of aquaculture from the subsistence type in small earthen ponds to commercial in large cages.

3.2.10 Conclusions

Overall increase in fish production from both capture and aquaculture by 10%. This increase has also been contributed by an upsurge in catches of Mukene and other small pelagic fish species. Increases in stocks of commercial fish species like Nile perch and Tilapia are yet to be realized gradually although this continues to hamper the fish processing industry. It is thus necessary to maintain and direct effort towards interventions to increase stocks of Nile perch and Tilapia.

3.3 Livestock Sub Sector Performance

3.3.1 Introduction

The Livestock subsector in Uganda currently consists of an estimated 14.08 million heads of cattle of which 1.74 million are dairy cows. Their populations over the last three years are shown in table 1 below:

Table 36: Populations of livestock 2013-2015 (projections in millions)

Species	Breed type	2013	2014	2015
Population of Cattle	Indigenous	12.29	12.66	13.14
	Exotic	0.90	0.92	0.94
	Total	13.19	13.58	14.08
Population of Goats		15.80	16.59	17.45
Population of Sheep		4.14	4.30	4.48
Population of Pigs		3.89	4.04	4.24
Population of Chicken	Indigenous	53.21	58.00	63.14
	Exotic	3.55	3.66	3.79
TOTAL		56.77	61.66	66.93

Source MAAIF 2015

The country's natural environment provided good grazing for cattle, sheep, and goats, with indigenous breeds dominating most livestock in Uganda. Smallholder farmers owned about 95 percent of all cattle goats, sheep and chickens.[1]

3.3.2 Mandate and Functions

The Directorate is organised into departments and agencies, each responsible for the different areas of livestock production. The mandate of the Directorate of Animal resources is to support sustainable animal diseases and vector control, market oriented animal production, food quality and safety, for improved food security and household incomes.

The functions of the Directorate include:

- a) Providing technical guidance for formulation, review and implementation of policies, legislation, standards, plans and strategies in animal production, animal health, veterinary regulation, inspection and enforcement;
- b) Coordinating, monitoring, inspection, evaluation and harmonization of national programs and projects in the sub sector;
- c) Advocating and mobilizing resources and assistance for the sub sector;
- d) Providing technical guidance for human and institutional capacity enhancement for delivery of services in the sub sector;
- e) Establishing and promoting collaborative mechanisms nationally, regionally and internationally on issues pertaining to the sub sector;
- f) Providing guidance on the generation, dissemination and application of appropriate technologies and the providing advisory services for the development of value chains in the sub sector.

3.3.3 Sub Sector Performance by Commodity

3.3.3.1 Dairy

a) Key issues that Dairy interventions addressed

They included:-

- i. Increasing milk production;
- ii. Increasing milk collection and transportation;
- iii. Increasing the volume of exports through increased processing and value addition capacity;
- iv. Increasing consumption of milk and dairy products;
- v. Developing the knowledge and skills of dairy stakeholders along the value chain;
- vi. Reducing postharvest losses.

b) Dairy Production

Ever since the dairy sector was liberalized, milk production has increased over the years. The current milk production stands at 1.96 billion litres of milk. About 70% (1.4 billion litres) of this annual milk production was marketed through informal and formal market retail channels. The formal retail channel absorption has risen from 10 % (approx. 102 million litres) of the

marketed milk in 2009 (World bank 2009) to at least 20 % (approx.. 270 million litres) of the marketed milk in 2013. The informal retail channel absorption has declined from 90% of the marketed milk in 2009 to 80% of the marketed milk in 2014.

Table 37: Annual Milk production 2010-2014

Estimates	2010	2011	2012	2013	2014
Milk production in billion litres	1.50	1.66	1.86	1.93	1.96
Marketed milk in billion litres	1.05	1.16	1.30	1.35	1.37

In terms of milk production, Uganda is divided into 15 sub regions that form six milk sheds i.e. Northern, Eastern South Western, Mid-Western, Central and Karamoja. Of all the six milk sheds, the South Western milk shed leads in milk production and is closely followed by Central whereas Karamoja is the least milk producer.

Table 38: Milk produced per sub regions (milk sheds)

Sub-region	2010	2011	2012	2013	2014
Buganda	452,824,632	500,553,876	556,713,770	589,917,168	591,779,287
Kigezi	31,129,508	34,687,328	39,265,971	39,107,481	40,969,900
Ankole	501,076,392	552,407,421	610,700,416	660,536,468	662,398,587
Busoga	76,547,541	85,314,468	96,620,691	96,070,042	97,932,161
Teso	58,323,103	65,045,152	73,769,488	72,976,262	74,838,381
Bugisu	31,727,603	35,456,450	40,389,483	39,322,072	41,184,191
Bukedi	21,229,910	24,020,205	28,087,090	24,768,169	26,630,288
Sebei	11,058,391	12,497,882	14,580,102	12,974,297	14,836,416
West Nile	22,896,528	25,964,701	30,503,515	26,404,964	28,267,083
Acholi	9,544,575	11,055,118	13,548,018	9,796,461	11,658,580
Lango	26,929,594	30,512,292	35,783,342	31,191,502	33,053,621
Madi	7,081,920	8,012,546	9,368,756	8,263,088	10,125,207
Bunyoro	68,174,994	75,548,580	84,490,826	87,833,550	89,695,669
Toro/Rwenzori	94,878,055	105,144,381	117,601,162	122,212,376	124,074,495
Karamoja	88,039,827	97,622,331	109,326,907	113,110,695	114,972,814
Totals	1,501,462,573	1,663,842,731	1,860,749,537	1,934,484,595	1,962,418,694

c) Milk collection

Most of the milk produced in Uganda is derived from small holder farms spread all over the country but mainly concentrated in what is referred to as the “cattle corridor”. Collection of milk produced in this vast area requires an elaborate network of milk collection infrastructure to minimize post-harvest milk losses and also facilitate marketing.

Accordingly, government liberalized the sub sector and also provided tax waiver that enabled private sector players to invest in milk collection and transportation infrastructure. These efforts have indeed paid off since most milk producing areas now have easy access to milk collection infrastructure as shown in Table 4 and Table 5, and milk losses have been curtailed.

Table 39: Distribution of rural milk collection Centres per milk shed 2014/2015

Milk Shed	Number of MCC's	Collection Capacity	Percentage
South Western	215	1,056,687	67.98%
Central	103	383,560	24.67%
Eastern	19	54,607	3.51%
Mid-Western	12	43,200	2.78%
Northern	5	16,400	1.06%
TOTAL	354	1,554,454	100%

The collection capacity of the rural milk collection centres increased from 1,497,954 to 1,554,454 between 2013/15 and 2014/15 across the different milk shades of the country. Karamoja region is estimated to produce of 100 million litres of milk annually, and plans are underway to establish the first milk collection centre there.

Currently, government is making deliberate effort to boost milk production and move into value addition by setting up cottage industries.

Table 40: Distribution of Rural milk collection Centres by Districts

District	Number of MCC's	Percentage	Collection Capacity	Percentage
Kiruhura	111	31.36%	556,107	34.5%
Mbarara	27	7.63%	153,080	10.2%
Ntungamo	21	5.93%	110,800	7.4%
Sembabule	26	7.34%	114,360	7.0%
Nakaseke	9	2.54%	60,600	4.0%
Ibanda	8	2.26%	49,000	3.3%
Kiboga	12	3.39%	41,500	2.8%
Kyankwanzi	10	2.82%	41,100	2.7%
Gomba	10	2.82%	35,500	2.4%
Bushenyi	7	1.98%	30,400	2.0%
Isingiro	10	2.82%	29,000	1.9%
Nakasongola	7	1.98%	27,350	1.8%
Rukungiri	7	1.98%	26,400	1.8%
Others	89	25.14%	279,257	18.2%
TOTAL	354	100%	1,554,454	100%

d) Milk transportation

From the farm to the milk collection centres milk is majorly transported in aluminum milk cans which are carried on bicycles and/or motorcycles. After chilling, milk is transported from the collection centres to the processing plants and urban raw milk markets by insulated bulk milk road tankers. Transportation of milk by the aforementioned tankers is necessary for the maintenance of cold chain and quality of the milk and minimize spoilage along the way.

Over the years private individuals, processing companies and even cooperatives have acquired milk road tankers. Government has also, in this regard, supported the above acquisition by providing a tax waiver on imported milk road tankers. The tax waiver has in turn enabled milk transporters to acquire road tankers at a relatively low price.

Currently, there are 243 milk road tankers with a total capacity of 1,599,900 litres. The tankers are mainly owned by processors, private traders and handful by cooperative.

e) Dairy Products and consumption

The per capita milk consumption increased from 54 litres in 2012 to 60 litres in 2013 and to 64 litres in 2014. This figure is still far below the recommended, by FAO/WHO, 200 litres per person year. The products processed include; Casein, Pasteurized Milk, UHT Milk, Yoghurt, Cheese, Ice Cream, Milk powder, Butter, Ghee, butter oil, Cultured milk and Raw Milk.

f) Milk Processing –Value addition

Milk processing in Uganda has registered tremendous growth. This has been due to the increase in number of processing plants and capacity. The milk processing plants (medium and small, have grown from 53 in 2013 with an installed capacity 1,304,330 litres to 76 plants with an installed capacity of 1,769,300 litres. The growth of the processing capacity has come with new dairy products on the market such as Casein. This makes Uganda to be the first East African country to process and export Casein to compete with Casein giants like United States of America (USA) on international market.

Table 41: Dairy Targets and Achievements

PLANNED INTERVENTIONS	ACHIEVEMENTS (Outputs and intermediate impact)	REMARKS
Increasing milk production and productivity		
1.1 Genetic improvement	Outputs	
a. Training of 50 AI technicians from all over the country.	Fifty three AI technicians were trained from 33 districts and 27 of them were equipped by EAAPP which has increased access to improved genetics.	Cost sharing of training costs from EAAPP, HPI and other stake holders boosted the training.
b. Produce 43,200 liters of liquid nitrogen for transporting semen.	Produced 19,287.5 lts of liquid nitrogen factor in the impact of 30% loss to the atmosphere.	Fair performance due to the new plant only limited by storage and distribution trucks.
c. Produce and distribute 76,200 doses of semen and	Produce and distributed 27,140 conventional	Lack of automated semen packing

PLANNED INTERVENTIONS	ACHIEVEMENTS (Outputs and intermediate impact)	REMARKS
<p>distribute to at least 700 farmers.</p> <p>d. Produce 1750 improved calves for Increasing access to improved genetics for improve production and productivity.</p>	<p>doses of semen to 60 districts, and 560 farmers benefited¹.</p> <p>1891 improved calves were produced at NAGRC and DB farms and are being reared for future extension to farmers.</p> <p>Outcome-</p> <ul style="list-style-type: none"> • Milk production increased from 1.93 billion litres in 2013/14 to 1.96Bn. In 2014/15 highest in the western milk shed and lowest in Karamoja. The projected revenue from the sale of milk is USD 521m in the same period. 	<p>machine where by the existing manual machine make it tiresome to process pack and store semen. Therefore there is an urgent need to procure an automated semen packing and freezing machine.</p> <p>Improved mechanization, desilting of valley tanks at Ruhengyere and Sanga and Ruhengere Ranches.</p> <p>The impact is also contributed to by interventions by other government and NG Organisations of restocking and AI provision²</p>
Increasing milk collection and transportation		
<p>Provision of infrastructure</p> <p>Supported organized dairy farmers' groups with milk bulk tanks/coolers either directly or through affordable credit(</p>	<p>Outputs</p> <p>15 milk coolers procured and distribution is ongoing under NAADS</p> <p>Tax waiver on milk tankers Currently, there are 243 milk road tankers with a total capacity of 1.4 million liters per day</p> <p>Outcomes</p> <ul style="list-style-type: none"> • Milk losses during transportation minimized meaning reduced losses for milk producers and transporters 	<p>Not possible to set target for milk tankers as these are private sector provided.</p>
Increasing value addition through increased processing capacity		
<p>Support establishment of processing facilities</p>	<p>Outcome</p> <ul style="list-style-type: none"> • Processing capacity increased from 1,304,330 in 2013/14 to 1,769,300 in 2014/15. 	<p>Govt provided and will continue to provide export</p>

¹ Conventional semen results in male or female calf while sexed semen results in female calf

² Office of the Prime Minister; NUSAF 2, Heifer Project International, Send a Cow, East African Dairy Project etc.

PLANNED INTERVENTIONS	ACHIEVEMENTS (Outputs and intermediate impact)	REMARKS
	<p>outcomes:</p> <ul style="list-style-type: none"> • –increased diversification and penetration of new markets • improved milk marketing and market opportunities for farmers 	certificates companies exporting dairy products.
Increased volumes and value of dairy exports.		
<p>Conduct 250 quality assurance exercises, analyse 2,000 milk and milk product samples against the micro-biological and chemical parameters and license 1500 dairy premises/equipment</p> <p>Certify all milk products destined for export</p>	<p>Output</p> <ol style="list-style-type: none"> 1. Quality assurance exercises undertaken were 242 2. 2,142 samples were analyzed 3. 1,417 premises and equipment were licensed <p>Outcome</p> <p>Dairy exports increased from USD 22.1 mill. in 2013/14 to USD23.6 mill. in 2014/15 increased foreign exchange</p>	
Create an enabling environment for growth of the dairy industry		
<ul style="list-style-type: none"> • Develop National Dairy Breeding Guidelines • Developing a National Breed Registration System for cattle • Build capacity of dairy farmers and veterinary technical staff to take up dairy breeding activities • Identification and registration of dairy cattle breeders 	<p>Outputs</p> <p>Draft breeding guidelines were developed and MAAIF - DAP team made consultations with DVOs from central, western and mid-western milk sheds</p> <p>Draft national breed registration system was developed by MAAIF – DAP staff in collaboration with NAGRC & DB staff</p> <p>Sensitized 85 Renaissance Livestock Network (RELIN) members during their 13th retreat in Sembabule district, on the need and importance of registering their cattle breeds with the Ministry</p> <p>Identified 43 dairy farmers from 20 districts who can be registered as dairy cattle breeders</p>	
Developing the knowledge and skills of dairy stakeholders for commercialization of milk production		
<p>Build capacity of dairy farmers and veterinary technical</p>	<p>Outputs</p> <p>6 dairy farmers and 4 technical staff were sponsored for dairy production learning tour</p>	

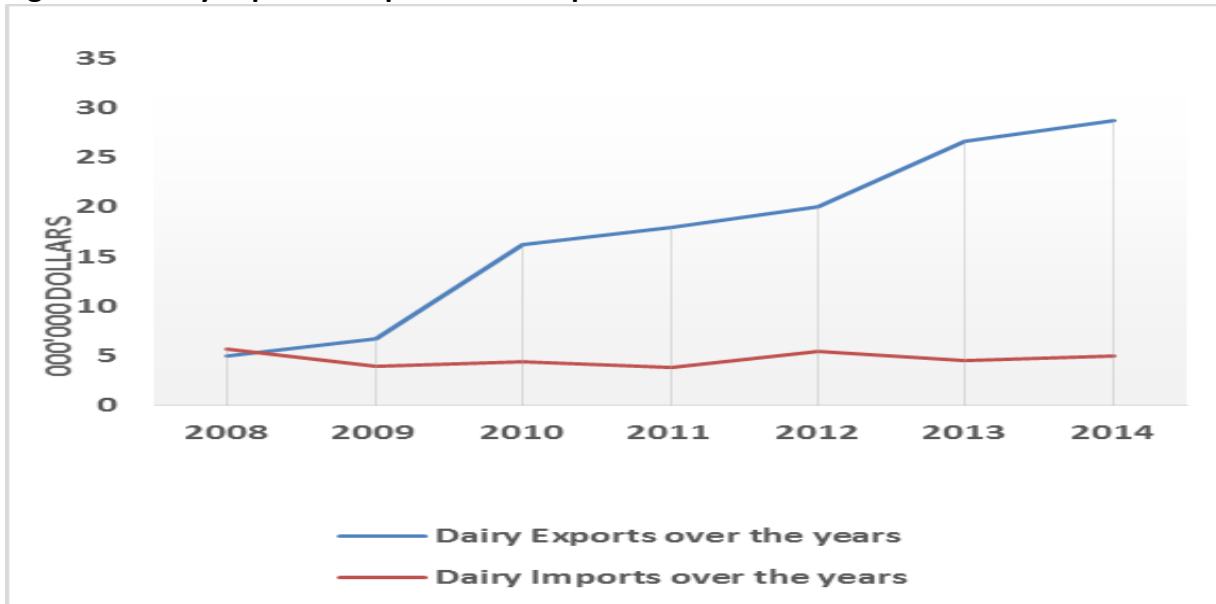
PLANNED INTERVENTIONS	ACHIEVEMENTS (Outputs and intermediate impact)	REMARKS
staff in commercial milk production	<p>in the Republic of South Africa</p> <p>3 staff sponsored for a short course on dairy breeding and production economics at African Institute for Advanced Training, South Africa</p> <p>5 staff facilitated to attend East and Southern Africa Dairy Association (ESADA) conference in Nairobi</p>	
Encouraging production of feeds and fodder for animal production		
<p>Capacity to manage rangelands and natural feed resources enhanced in 28 Cattle Corridor districts through technical backstopping and promoting Appropriate technologies and modern management practices</p> <p>Technical capacity of 30 district local governments developed in feed ration formulation feed planning and feed budgeting through training of service providers</p> <p>Produce and disseminate 3,000 technical and extension manuals on rangeland management improvement and rehabilitation</p> <p>Compounded animal feeds production and</p>	<p>Outputs</p> <p>Capacity to manage rangelands and natural feed resources was enhanced in 12 Cattle Corridor districts through technical backstopping and promoting Appropriate technologies and modern management practices</p> <p>Technical capacity of 25 district local governments developed in feed ration formulation feed planning and feed budgeting through training of service providers</p> <p>Produced and disseminated 500 technical and extension manuals on rangeland management ,improvement and rehabilitation</p> <p>Consultative meetings held on draft animal feeds bill</p>	

PLANNED INTERVENTIONS	ACHIEVEMENTS (Outputs and intermediate impact)	REMARKS
quality assurance enhanced		
Improved access to water for livestock		
<p>Water use guidelines and standards for public water infrastructure developed and disseminated</p> <p>Extension manuals on Sustainable water for livestock management produced and disseminated</p> <p>Capacity to manage national water reservoirs of 30 local governments enhanced and supported</p> <p>Appropriate water development, use and storage facilities promoted in 25 local governments and supported through supervision monitoring and technical backstopping</p>	<p>Outputs</p> <p>Water use guidelines and standards for public water infrastructure developed and disseminated</p> <p>Extension manuals on Sustainable water for livestock management produced and disseminated</p> <p>Capacity to manage national water reservoirs of 25 local governments enhanced and supported</p> <p>Appropriate water development, use and storage facilities promoted in 20 local governments and supported through supervision monitoring and technical backstopping</p>	
Encouraging use of labor saving technologies (fodder choppers, tractors, milking machines etc.)		
Build capacity of 25,000 service providers through trainings in the use of machinery and labor saving technologies in feeds and feeding	<p>Outcome</p> <p>Build capacity of service providers through trainings in the use of machinery and labor saving technologies in feeds and feeding e.g. feed processing treatment</p>	

PLANNED INTERVENTIONS	ACHIEVEMENTS (Outputs and intermediate impact)	REMARKS
e.g. feed processing treatment		

g) Dairy Exports

Figure 20: Dairy Exports compared with Imports



From Figure 1 above, dairy exports increased from USD 22.1 million in 2013/2014 to USD 23.6 million in 2014/2015. During the year Dairy exports increased while dairy imports reduced.

3.3.3.2 Meat

a) Introduction

Uganda is endowed with abundant animal genetic resources consisting of 13.6 million cattle, 16.6 million goats, 4.1 million pigs and 63 million chickens (UBOS Statistical Abstract 2013)³. This coupled with a traditional livestock rearing culture among most indigenous communities in Uganda offers an opportunity for a viable national meat industry. However the output per animal in terms of meat production is very low, with a weaning rate of 46% as compared to 70% or more in local ranches⁴. These resources account for approximately 8% of the agricultural GDP and 1.7% to the National GDP. A number of investment programmes aimed at developing a sustainable livestock industry targeting provision of sufficient quantities of meats for national, regional and international markets have been implemented in the past (10 years). Although significant progress has been made, the potential is far from exploited.

³ UBOS 2011 Statistical Abstract

⁴ Weaning rate is the number of animals weaned divided by the number of animals born times 100%. The figure is important to measure productivity as it determines how many animals can be sold in a year taking into account replacement of breeding stock.

b) Key Issues that Meat Commodity Interventions addressed

The key areas of intervention the Ministry has been engaged in during the year under review are:

- i. Increasing production of meat through provision of improved genetic material
- ii. Increasing productivity through improved nutrition and availability of water for livestock
- iii. Enhancing value addition through supporting of processing infrastructure set up.

Table 42: Meat Production

PLANNED INTERVENTIONS	ACHIEVEMENTS (Outputs and intermediate outcome)	REMARKS
Key interventions: 1. Increasing meat production and productivity through genetic improvement		
Cattle 1. Provide 1750 improved calves from NAGRC farms to farmers on demand driven basis	Outputs <ul style="list-style-type: none"> • 1891 improved calves were produced at NAGRC and DB farms and are being reared for future extension to farmers. • 41,068 Pure breed exotic cattle imported through Malaba, Busia, Lwakhakha, Entebbe and Katuna 	Made possible by new liquid nitrogen plant at NAGRC Availability of water through desilting contributed to the good performance.
Goats Distribute 7,532 Female Mubende goats from Sembeguya goat multiplication project Production of 1000 Breeding goats for distribution to farmers under NAGRC&DB.	<ul style="list-style-type: none"> • Eight hundred five kids of Mubende, Small East African boar goat and appropriate crosses were produced for future extension to farmers at NAGRC farms. outcomes: high quality disease tolerant indigenous species preserved and propagated	The performance was 80.5% however; the shortfall of 195 kids was due to lack of suitable housing for the kids which led to high mortality.
Pigs Production of 200 Comb rough piglets and extended to farmers in the country.	Two hundred and eleven piglets of Camborough breed were born and extended to farmers in Wakiso, Gulu, Mukono, Soroti, Kamuli, Buikwe, Kampala, Masaka, Lira, Kasese, Kayunga, Pallisa, Jinja and Mbale.	There was over performance due to increased care new stock of pigs
Poultry Production and distribution of	Produced and distributed 290,212 chicks and distributed to farmers to 53 districts of Uganda and Kenya. Fourty four percent	Under performance due to the delayed restocking of a new line

PLANNED INTERVENTIONS	ACHIEVEMENTS (Outputs and intermediate outcome)	REMARKS
<p>840,000 Kuroiler chicks under NAGRC&DB.</p> <p>Facilitate importation of exotic layer and broiler parent stock</p>	<p>of the total birds produced were extended to female farmers for gender balance and budget crosscutting issues.</p> <ul style="list-style-type: none"> • 4.4 million Day old chicks parent stock imported through Busia, Katuna, Entebbe and Malaba • 2031 Day old Turkeys imported through Entebbe and Malaba <p>Outcome</p> <ul style="list-style-type: none"> • Increased availability of breeding and stocking materials • Increased availability of quality animal protein to the population 	<p>of parent stock and there is an urgent need to build new structures since CAA has taken land where poultry structures were located.</p>
2.0 Increasing meat production and productivity through nutritional improvement		
<p>Evaluation and multiplication of improved pasture and fodder germ-plasm on NAGRC farms by establishing 500 acres.</p> <p>Production of animal feeds Under NAGRC farms;</p> <p>300 tons of quality animal feeds produced.</p> <p>6,000 bales of hay produced</p>	<p>Outputs</p> <p>Maize Silage 526 acres and by end of the year , High breed 79 Elephant grass 36 acres, Lablab 6.25 acres, Green leaf Desmodium 1 acre, Panicum maxima 1 acre.</p> <p>Centrosema 5 acres, Rhodes Grass 20 acres, Brachiaria Brithantha 2 acres, Wagabolige Potato vines 2 acres Mukuna 3 acres, Forage soghum 1 acre, Caliandra 3000 seedlings, Soya bean 4 acres</p> <p>Three hundred and sixty tons of silage and Fifteen tons of concentrates were produced and the technology was disseminated to 2000 farmers and students from 10 districts.</p> <p>Seven thousand bales of hay each weigh 35 Kgs (245 Metric tons).This has improved animal nutrition condition of animals and improved conception rates.</p>	<p>There was over performance due to improved mechanization of tractors and implements from EAAPP and MAAIF.</p> <p>There was over performance as a result of two additional tractors and implements from MAAIF.</p> <p>One additional hay baler was received from EAAP and became functional during 2014/15.</p>

PLANNED INTERVENTIONS	ACHIEVEMENTS (Outputs and intermediate outcome)	REMARKS
3.0 Enhancing value addition through supporting of processing infrastructure set up		
<p>Provision of infrastructure for marketing, processing and value addition:</p> <p>Facilitate private sector to build one poultry and one beef slaughter facilities</p>	<p>Outputs</p> <ul style="list-style-type: none"> • Poultry slaughter house built in Nakaseke with capacity to slaughter over 10,000 birds per day. • A cattle Export slaughter abattoir built near Bombo • Constructed veterinary inspection offices at Border posts: Elegu, Oraba, Pakwach and EntebbeA big abattoir/processing facility has been built in Semuto-the biggest in Uganda and East Africa. In November, 2014, President Yoweri Museveni commissioned the \$ 10 million ultra-modern poultry farm • Yo kuku (by Hudani Manji Holdings, recently merged with RCL Foods to become HMM Rainbow) plans to have capacity of 65,000 broilers at a time within 10 years' time. Currently at 180,000. Has 4 metric tonne/hour feed mill producing poultry feeds <p>Outcomes</p> <ul style="list-style-type: none"> • Improved biosafety and quality control of meat and products • Uganda is now in position to export animal products due to improved sanitary and Phytosanitary infrastructure 	

c) Seed/planting/stocking materials distributed to farmers

Under NAADS program, about 4,000 in calf dairy heifers were inspected and distributed to beneficiaries all over the country.

Figure 21: Breeding of Sahiwal and Ayshire Cows



Table 43: Exports of Meat, Meat Products and by Products

2014/15			
Product	Quantity	Product	Quantity
UHT (lts)	3,043,664	UHT (lts)	1,565,360
Milk Powder (kg)	2,858,492	Milk Powder (kg)	1,721,160
Yogurt (kg)	40,587	Yogurt (kg)	243,450
Ghee (kg)	457,037	Ghee (kg)	1,063,483
Cheese (kg)	-	Cheese (kg)	2,150
Butter (kg)	-	Butter (kg)	3,155
Butter Oil (kg)	-	Butter Oil (kg)	596,720
Casein (kg)	-	Casein (kg)	911,000

Source: MAAIF 2015

d) How different stakeholders have contributed to the reported performance

- i. For the development of dairy breeding guidelines, the World Bank/GoU funded the activities and district staff were consulted for their input.
- ii. MAAIF staff have been key in inspection and selection of dairy heifers distributed under NAADS program
- iii. To improve market access for farmers, the International Livestock Research Institute (ILRI) and its local partners have championed the formation and registration of seven pig farmers' cooperative societies that help farmers to collectively market their pigs and jointly access inputs and services
- iv. The interim committee of the multi-stakeholder platforms (MSPs) initiated in 2014 has engaged the Minister for MAAIF to advocate revision of the feeds policy to strengthen the enforcement of quality standards of pig feeds.

- v. An ILRI project entitled 'More Pork' facilitated the setup of a biogas plant at Wambizzi Pig Cooperative, the only formal centralized pig abattoir in the country, as a pilot study on waste management at the slaughter node. The project has undertaken a feasibility study for the setup of a centralized pig abattoir in Masaka District and a business plan for this facility.
- vi. In Masaka District, the local government has partnered with the Chinese government and 55 entrepreneurs to boost livestock value addition particularly in pork processing
- vii. A series of training manuals for the pig value chain that addresses information and knowledge gaps on different aspects of pig husbandry were developed by ILRI
- viii. A feasibility study on the set up of a pig business hub in Kabonera-Kyanamukaaka sub county of Masaka District was carried out to find ways to improve access to affordable pig business inputs and services for the smallholder producers and enhance business opportunities for other value chain actors like input service providers, transporters and pig traders.

e) The extent to which key issues planned to intervene have been addressed and what remains to be done

- i. Dairy breeding guidelines are in draft form, consultations made in three milk sheds and need to consult stakeholders in the remaining three milk sheds.
- ii. Inventory of dairy farmers who have potential for becoming dairy breeders has been compiled and we need to start on their registration.
- iii. Cattle breed registration system is also in draft form and need to be written in detail.
- iv. There is urgent need to make regulations/Rules to operationalize the Animal Breeding Act (2001)

3.3.3.3 Silk commodity

a) Issues that the interventions were addressing

- i. Breeding and maintenance of mulberry stocks and silkworm breeds at the National Sericulture Centre in Kawanda
- ii. Multiply and distribute quality mulberry planting materials to farmers
- iii. Provide quality silkworm eggs to farmers for increased cocoon production
- iv. Promote silk value addition and marketing
- v. Conduct training and dissemination of sericulture technologies to farmers and stakeholders

Table 44: Sericulture Performance versus Targets Achieved

INTERVENTION	ACHIEVEMENTS (Out puts and intermediate impacts / outcomes)	REMARKS
Enabling environment	Output: <ul style="list-style-type: none"> • The Draft National Sericulture policy was reviewed by key stakeholders in 	

INTERVENTION	ACHIEVEMENTS (Out puts and intermediate impacts / outcomes)	REMARKS
	the industry.	
Support silk production and productivity	Output: <ul style="list-style-type: none"> 5.2 tons of mulberry planting materials were produced and distributed to 8 farmer groups in Wakiso, Luwero, Mpigi and Nakaseke. 25 acres of mulberry planted in the above districts 	Improved mulberry acreage.
	Output: <ul style="list-style-type: none"> 230 boxes of silkworm eggs (each box contains 20,000 eggs) were distributed to farmers in Kamuli, Luwero, Mpigi and Wakiso districts. 	The number of farmers rearing silkworms is still small.
	<ul style="list-style-type: none"> 15 tons of silk cocoons produced for obtaining silk yarn Outcome: <ul style="list-style-type: none"> 2.1 tons of silk yarn worth USD 7,000 exported to Ethiopia and Egypt 	Improved silk production and incomes from silkworm farming registered.
Capacity building	Outputs: <ul style="list-style-type: none"> 56 farmers were trained in Silkworm farming technologies (Mulberry cultivation and management, silkworm rearing, post-harvest cocoon processing) 2 district Entomologists of Tororo and Sheema districts attended an international course on Sericulture and silk industry in Mysore, India. Output: <ul style="list-style-type: none"> 5 farmer groups mobilized and sensitized in 5 sub counties in Luwero 	More farmers and district staff to be trained.

b) Challenges

- i. Most farmers lack silkworm rearing houses and rearing equipment
- ii. Inadequate sericulture infrastructure such as cooperative silkworm egg hatching centers, cocoon driers and stores
- iii. Limited number of trained district staff to supervise and guide farmers.
- iv. Outbreaks of silkworm and mulberry pests and diseases.
- v. Limited marketing outlets for farmers' cocoons and silk yarn.

c) Mitigation measures

- i. Encourage farmers to construct low cost rearing houses using available local materials.
- ii. Conduct pest and disease surveys and put in place control measures.

- iii. Support the establishment of more cooperative young silkworm rearing centers.
- iv. Support local government and private sector to build capacity for efficient extension service delivery and supervision.

d) What remains to be done

- i. Develop a Strategic plan for Sericulture
- ii. Develop Standard Operating procedures for Sericulture
- iii. Mobilize and Sensitize more farm farmers to plant mulberry, rear silkworms and produce cocoons.
- iv. Enhance silk production and productivity.

3.3.3.4 Honey and other bee hive products

a) Issues that the interventions were addressing

- i. Promote and support production of honey and other beehive products
- ii. Ensure standards and quality assurance of inputs and services
- iii. Promote value-addition and marketing of honey and other beehive products
- iv. Set an enabling environment for the growth and development of the apiculture industry in Uganda

Table 45: Disease Control Performance versus Targets Achieved

PLANNED INTERVENTIONS	ACHIEVEMENTS (outputs and intermediate impact/outcomes)	REMARKS
Promote and support production of honey and other bee products		
<p>a. Train 40 beekeeper groups in improved apiary husbandry at established demonstration centres for honey production</p> <p>b. Promote new knowledge and information about apiculture production through Agricultural shows</p> <p>c. Train 47 entomologists in Apiculture data collection</p>	<p>Outputs:</p> <ul style="list-style-type: none"> • 38 beekeepers groups trained in improved apiary husbandry. they are located in: Masindi, Hoima, Buliisa, Mbarara, Bushenyi, Kabale, Ibanda, Isingiro, Kabalora, Kamwenge, Masaka, Mpigi, Luweero, Nakaseke, Nakasongola, Kayunga, Oyam, Koboko, Mbale, Sironko, Bukedea, Pallisa, Dokolo, Abim and Yumbe • Exhibited new technologies at World food day exhibitions at Namulonge in September, and during the Honey week at Kati Kati restaurant in august, 2014 • 10 entomologists from the districts of; Iganga, Kamuli, Pallisa, Sironko, Mbale, Mukono, Busia, Buyende, Bugiri, Kaliro, and Kumi trained in Apiculture data collection <p>Outcomes:</p> <ul style="list-style-type: none"> • Tradable honey increased from 12,000 MT in 2013/2014 to 12,400MT in 2014/2015; estimated at US \$38.4 million and US \$39.68 	<p>Limited availability of funds impacted negatively on planned trainings</p>

PLANNED INTERVENTIONS	ACHIEVEMENTS (outputs and intermediate impact/outcomes)	REMARKS
	<p>million respectively</p> <ul style="list-style-type: none"> • Tradable bees wax increased to 720 MT in 2014/2015, worth US \$ 5.2 million compared to 500MT in 2013/2014, estimated at US \$ 3.61 million • Extracted propolis tincture increased from 4,000litres in 2013/2014 (US\$256,000) to 5,000 Liters (US\$320,000) in 2014/2015 • Kabalore Beekeepers' association exported 1kg of bee venom to South Korea, generating US \$28,000 	
Ensure standards and quality assurance of inputs and services		
<p>a. Train 50 ToTs in using the Simplified Version of the National Beekeeping, Training and Extension Manual</p> <p>b. Register equipment/input dealers in the country</p>	<p>Outputs:</p> <ul style="list-style-type: none"> • 24 ToTs trained. They came from: Kampala, Kiruhura, Mbarara, Masindi, Kabalore, Hoima, Kaboko, Kole, Maracha and Lira districts • Registered 5 equipment dealers (Bee house products; Ntinda, Butuntumula Area Cooperative Enterprise; Luweero, Mountain Elgon Beekeeping Community; Sironko, Kaddu John Ltd; Kawempe, and The Hive Group; Kampala) 	<p>Many equipment dealers do not meet required standards</p>
Promote value-addition and marketing of honey and other beehive products		
<p>a. Collect 30 honey samples for residue monitoring</p> <p>b. Strengthen 40 beekeeper organizations in management, entrepreneurship and group marketing</p> <p>c. Inspect 19 centres for bee products value-addition for quality control</p>	<p>Outputs:</p> <ul style="list-style-type: none"> • 30 honey samples collected, analysed and residue monitoring plan submitted to EU • 29 beekeeper organizations strengthened in management, entrepreneurship and group marketing • 19 centres for value-addition inspected in Mbale, Sironko, Kabale, Mbarara, Nakaseke, Nakasongola, Arua and Yumbe. <p>Intermediate outcomes:</p> <ul style="list-style-type: none"> • Emergency of more value-added products like propolis tincture, 'enturile' (honey liquor), pollen tablets, propolis tablets, bee venom, honey lotions/creams, shoe & furniture polish, etc. • 4 value-addition centres received UNBS certification in 2014/159 (i.e., Bugari Winery, Connoisseur Honey, Malaika Honey, and 	<p>Uganda honey certified for EU market,2015</p> <p>Shortage of funds affected completion of activities</p>

PLANNED INTERVENTIONS	ACHIEVEMENTS (outputs and intermediate impact/outcomes)	REMARKS
	Kabalore Beekeepers association) compared to 3 in 2013/2014 <ul style="list-style-type: none"> • 150,000 liters of Honey wine generated US\$ 900,000 in 2014/2015 • 71 brands of Ugandan honey were registered on the market (2014/2015) contributing to 85% market share, 15% being imported brands 	Many beekeepers are engaged in value-addition
Set an enabling environment for the growth and development of the apiculture industry in Uganda		
Put in place policies, procedures, plans and strategies for improving the apiculture industry	Outputs: <ul style="list-style-type: none"> • Final copy of the Draft National Apiculture Policy produced • standard Operating Procedures for Apiculture finalised and distributed to 10 districts for pre-testing 	Awaits discussion by MAAIF TPM

Figure 22: Bees on Honey Comb



b) Contribution of other stakeholders to the performance of the apiculture industry

- i. The Uganda National Apiculture Development Organization (TUNADO)-Apex body recognized by government of Uganda & mandated by members & stakeholders to coordinate all value chain actors in the apiculture industry. Arrange the annual honey week and the bi-annual best bee farm competitions

- ii. ApiTrade Africa was formed in Dublin in 2005 and legally registered in 2008 and formally started working in 2009. It coordinates issues of apiculture production and productivity in Uganda
- iii. Uganda National Bureau of Standards – certification of honey and other beehive products
- iv. Uganda Export Promotions Board – developed strategy to have honey and other beehive products enter the country’s export basket
- v. Chemiphar Ltd - a laboratory accredited for honey analyses by EU
- vi. Other Development Partners (Bees for Development, Swiss Contact Uganda, Environmental Alert, Self Help Africa, SNV, FAO, ZOA, and OXFAM, Trias, ICCO) play various roles throughout the entire apiculture value chain

Table 46: Challenges and Mitigation Measures

Challenge	Mitigation
Lack of a particular national beekeeping training institute for technical and hands on skills development in beekeeping in Uganda	Refurbish and upgrade the Nakasongola National apiculture center to National Apiculture Training Institute
In adequate beekeeping technology adoption centres	Equip the existing apiculture technology demonstration centres with improved technology(beehives, protective gears and processing equipment)
Lack of training guides in major local languages	Translate the National Beekeeping Training and Extension Manual into major local languages
Threat of reducing bee forage, habitats and bee colonies	Establish bee reserves to conserve the existing bee fodder and bee species
Poor quality beekeeping equipment	Routine supervision and registration of suppliers
In adequate data for informed planning and decision making especially from other players in the apiculture industry	Establish/ rejuvenate a platform to engage all players
Threats of honey bee pests, predators, parasites and diseases.	MAAIF to work closely with the AU-IBAR (Africa Apiculture Platform) to handle bee pests and diseases
Inadequate extension services	Districts to recruit entomologists

c) What remains to be done

- i. Approval of the National Apiculture Policy;
- ii. Certification of majority of honey dealers by Uganda National Bureau of Standards (UNBS);
- iii. Registration of more equipment dealers;
- iv. Printing and distribution of Standard Operating Procedures for Honey and other Beehive products to stakeholders.

3.3.3.5 Hides and skins

a) Introduction

In Uganda all tanneries other than the leather industries of Uganda (10% of their total production) process hides and skins only up to Wet blue. All the wet blue is exported to Kenya, India, Italy and other counties. Unknown amount of hides and skins are exported to other countries tax free. Majority of traders take interest only on the meat and regard hides and skins as a waste not knowing the value of hides and skins as an income generating product to the national economy.

Table 47: Amount and Value of Hides and Skins Exported During 2014/2015

Hides, skins and leather exports 2014/2015				
Product	Consignments	Total quantity	Destination	Exporter
Wet blue hides (kg)	206	7,518,899	Switzerland, Turkey, China, Pakistan Italy, Kenya, India	Hoopoe Trading Ltd, SWT Leather Industry,, Skyfat Tannery, Jambo Tannery
Limmed untanned hides strips & trimings (kg)	21	425600	S. Africa	Tannery Waste Management
Wet blue skins (kgs)	68	1490,017	Switzerland, Pakistan, China, Italy, India	Hoopoe Trading Ltd, SWT Leather Industry,, Skyfat Tannery, Jambo Tannery
Wet blue chrome tanned leather (kg)	91	1,579,079	China Kenya, Italy	Leather Industries Uganda Ltd Elgon Leather

Source: MAAIF 2015

3.3.3.6 Pest, vectors and disease control

The favorable agro-ecological conditions for meat and milk production in Uganda, unfortunately also favor the survival and proliferation of especially infectious disease causing agents. Animal diseases have therefore remained a big constraint to livestock production and marketing during the year under review.

b) Issues that the interventions were addressing

- i. Routine surveillance to determine the prevalence of diseases
- ii. Investigation of animal disease outbreaks in the field and confirmation at the National animal Disease Diagnostics and Epidemiology Laboratory

- iii. Strategic/tactical vaccination and treatment conducted in districts experiencing outbreaks
- iv. Ticks and tick borne diseases investigated in various regions
- v. Trypanosomiasis and sleeping sickness control (COCTU)

c) Major pests, vectors and disease outbreaks reported during 2014/2015

- i. Foot and Mouth Disease--The country experienced a series of FMD outbreaks which affected 71 outbreaks were reported during 2014/2015 compared to 25 districts affected during 2013/2014. The affected districts in 2014 were; Abim, Albetong, Amudat, Budaka, Bududa, Bugiri, Bukedea, Bukwo, Bulamburi, Busia, Buyende, Gomba, Isingiro, Kaabong, Kaberamaido, Kapchorwa, Kasese, Katakwi, Kiboga, Kibuko Kiruhura, Koboko, Kotido, Kumi, Kween, Kyankwanzi, Lamwo, Manafwa, Mbale, Mbarara, Moroto, Moyo, Mubende, Nakapiripirit, Nakaseke, Napak, Ngora, Nwoya, Oyam, Pallisa, Rakai, Serere, Sironko, Soroti and Wakiso. During 2015, the districts affected were; Amudat, Apac, Arua, Bukedea, Bulamburi, Isingiro, Kapchorwa, Kibale, Kiruhura, Kiryandongo, Kween, Kyankwanzi, Lamwo, Manafa, Luwero, Mbale, Mbarara, Moroto Mukono, Nakaseke, Nakasongola, Rakai, Sironko, Wakiso and Yumbe. FMD outbreaks migrated from traditional known areas of south and central to south eastern, eastern, Karamoja, northern and north Western Regions following illegal movements of infected livestock.
- ii. Brucellosis a zoonotic disease affecting animals and humans was also a major problem that affected 22 districts in 2014/2015 up from 9 districts affected in 2013/14. Due to its socioeconomic and public health importance, brucellosis requires to be upgraded to state controlled diseases. Currently its control is divested in the hands of the farmers and the private sector. Affected districts during 2014/2015 were Lyantonde, Mbarara, Wakiso, Moroto, Kampala, Mukono, Kasese, Kibaale, Masaka, Sembabule, Nakasongola, Gomba, Busia, Kiruhura, Isingiro, Amudat, Nakapiripirit, Abim, Kaboong, Kotido, Kitgum, Nakaseke and Mpigi.
- iii. Rabies-The country experienced an increased incidence of rabies in animals and humans resulting from inadequate vaccinations in animals and difficulties in controlling animal movements. The disease was reported in 23 districts in 2014/15 up from 11 districts during 2013/14. Rabies was reported in the districts of Albetong, Bugiri, Bukomansimbi, Kamwenge, Kotido, Maracha, Mukono, Rubirizi, Sironko, Soroti, Kitgum, Kibale, Kumi, Isingiro, Kapchorwa, Masindi, Bundibugyo, Kabarole, Busia, Moyo, Wakiso, Mityana, and Nakaseke. The Ministry has plans to initiate a policy reform to enable better identification and control of dogs and cats through licensing and destruction of stray and un-owned dogs.
- iv. CBPP was reported in the districts of Kaboong, Buikwe, Bushenyi, Mbarara, Kiruhura, Wakiso and Kabarole while Anthrax was reported in the districts of Gomba, Kamwenge and Kanungu.
- v. Several outbreaks of New castle disease affecting poultry and African Swine fever affecting pigs were reported in most parts of the country.
- vi. Tsetse fly coverage in the country is currently estimated to be 60-70%. The fly has been isolated in areas traditionally free from the fly like the Karamoja and Teso regions. The greatest constraint to livestock production in Uganda and Africa is the presence of the tsetse fly which transmits trypanosomiasis in livestock and sleeping sickness in humans. At National level with 13.5 million cattle, an effective tsetse control campaign can increase income from milk and beef by USD 73 million

- vii. Tsetse infestation observed to be on the increase in several parts of the country including Karamoja region, Kalangala islands and Lango / Acholi sub-region.

d) Incidence/prevalence of disease/vector/pest attack

- i. Prevalence of animal trypanosomiasis was determined for 32 districts (Busoga, Buganda, Teso, Bukedi, Lango/ Acholi). Over 21,030 samples were collected from 150 villages. Prevalence levels ranged from 0 to 70%.
- ii. Animal Trypanosomiasis (Nagana) was reported in high proportions in Karamoja region (up to a prevalence of 35%)

e) Isolated cases reported during 2014/2015

- iii. Tick Borne Diseases (TBDs) including East Coast Fever (ECF), anaplasmosis, babesiosis and heart water were a major challenge to the livestock farmers. The control of tick borne diseases is vested in the hands of the farmer and the private sector. The high cost of inputs (Acaricide, pumps and drugs) and knowledge gaps on proper acaricide application has resulted in Acaricide resistance in the country especially in the cattle corridor. This has resulted in increased incidences of tick borne diseases such as East coast fever, rickettsia, Babesiosis and Anaplasmosis with profound losses to the farmers due to deaths of animals.
- iv. A total of 522 Dip-wash samples were submitted for Acaricide concentration analysis between July 1st 2014 and June 30th 2015. Out of the 522 samples collected, 451 were found to be below normal concentrations, 27 above Normal Range and 44 within the normal range.
- v. Isolated cases of sleeping sickness were identified; one in Kalangala and another in Bushenyi

f) Control measures applied

The interventions to control animal diseases included:

- i. Disease investigations, surveillance and monitoring
- ii. Vaccinations and treatments
- iii. Animal movement control
- iv. Capacity building and infrastructure development
- v. Conducted awareness among the communities for their participation in tsetse and trypanosomiasis control
- vi. Capacity building of communities through provision of insecticides, traps and training
- vii. Promoted the use of live bait and artificial baits technologies for tsetse suppression in the affected areas
- viii. Undertook trypanosomiasis surveillance and treatment of confirmed cases

g) Impact of the control measures

- i. Tsetse control interventions in West Nile region helped to reduce trypanosomiasis prevalence (sleeping sickness & Nagana) in west Nile region. e.g. so far only 2 cases of sleeping sickness have been reported in that region since the beginning of 2015 while one case has been reported in Kalangala district. Generally, the disease burden has been reduced.

- ii. The Dokolo tsetse and trypanosomiasis awareness Centre continues to act as the main Centre of reference in the region recognized by the district authorities and embraced by the local communities.
- iii. Disease and vector surveillance strengthened in the high risk zones of Acholi / Lango region.
- iv. Gradual reduction of new infections, as well as progressive reductions of mortality and morbidity rates in controlled / intervention areas.
- v. Capacity was strengthened at community level and rollout to other Sub counties ongoing. In Kaberamaido district, 25 spray persons have been empowered to promote the live bait technology and 50,000 cattle were sprayed to act as live baits. 80 spray persons received mentorship training in the districts of Luuka, Iganga, Kamuli and Mayuge. Using these persons, 16,000 cattle were sprayed and thus created 16,000 live bait targets (mobile traps) to help control tsetse.
- vi. Tsetse survey conducted in Luuka district and results indicated no tsetse flies in the area.
- vii. Sustained tsetse and trypanosomiasis control activities especially with disease surveillance have led to no reported cases of sleeping sickness in the entire Busoga region for the past 2years.
- viii. In Karamoja (Kaabong district), tsetse survey results indicated the highest tsetse densities being around the Lolelia-Kapedo sub-county boundaries; with densities of 11.6 FTD observed. 3000 cattle were screened for trypanosomiasis and a prevalence of 10% was recorded. The infected animals were treated with Diminazene aceturate. A total number of 3,782 cattle and 8 donkeys, 1670 Goats and sheep were sprayed with Vectocid (Deltamethrin). Sub-counties were; Sidok, Lolelia, Kapedo, Karenga, Kawalako and Obalangit. 400 tsetse traps were deployed in Kaabong as a community demonstration strategy.

Table 48: Performance versus Targets Achieved

PLANNED INTERVENTIONS	ACHIEVEMENTS (Outputs and intermediate outcomes)	REMARKS
Control of major epidemic diseases		
Key interventions	Outputs	
a) Carry out investigations on 80% of the disease outbreaks	<ul style="list-style-type: none"> • 70% of disease outbreaks were investigated • Surveillance visits to 55% of the districts 	Insufficient funds for surveillance and surveys
b) Carry out surveillance visits to 65% of the districts	<ul style="list-style-type: none"> • Carried out diagnostic tests on 10% of specimens submitted 	Lack of adequate quantities of reagents
c) Conduct timely animal disease diagnosis for at least 90% of the cases	<ul style="list-style-type: none"> • Number of districts reporting promptly on animal diseases and Veterinary Services increased from 34.3% in 2013 to 42.4% in 2014. 	
d) Undertake active and passive surveillance for animal diseases in all	<ul style="list-style-type: none"> • Construction of the laboratory 	

PLANNED INTERVENTIONS	ACHIEVEMENTS (Outputs and intermediate outcomes)	REMARKS
<p>112 districts</p> <p>e) Complete construction of the National veterinary diagnostics referral ab</p> <p>f) Procure and distribute vaccines for major diseases during outbreaks</p>	<p>completed</p> <p>CBPP 500,000 doses procured, FMD 1,000,000 doses of FMD Rabies 250,000</p> <p>Outcome Timely and accurate reports on veterinary services submitted to NADDEC Improved diagnostic capacity in that the Laboratory diagnosis is now done within 24 hours of sample submissions</p> <p>The laboratory has been equipped with facilities to handle diseases that require high containment, consequently enhanced biosafety and biosecurity.</p> <p>Procured and distributed 565,000 doses of CBPP vaccine Procured and distributed 855,000 doses of FMD vaccine Procured and distributed 100,000 doses of rabies vaccine</p> <p>Outcome About 10% of the national herd was protected against FMD and CBPP.</p>	<p>Laboratory designed to handle very dangerous pathogens e.g. Ebola, Marburg</p> <p>Disease incidences reported have decreased</p> <p>The vaccination coverage is still low and requires prioritization in 2015/16 FY</p>
<p>Animal movement control undertaken in the entire country at the stock routes and ports/border posts</p> <p>Agricultural police put in place and regulations enforced during animal quarantine restrictions to enable milk and meat production</p>	<ul style="list-style-type: none"> • Recruited and posted 10 Senior Veterinary Inspectors (SVIs) to 10 regions of the country • Maintained a 24/7 veterinary inspection service at 9 ports of entry exit • Linked and harmonized veterinary inspection service at ports of entry/exit with URA ASYCUDA World • Established MAAIF police unit in the animal sub-sector • Inspected all incoming and outgoing animals and animal products through designated ports of entry/exit <p>Outcomes:</p>	<p>Motorized transport should be provided to senior zonal inspectors to enable them traverse the districts and stock routes in their zones to increase efficiency</p> <p>Increase logistical support for animal movement control</p>

PLANNED INTERVENTIONS	ACHIEVEMENTS (Outputs and intermediate outcomes)	REMARKS
	<ul style="list-style-type: none"> • Illegal entry/exit and movement of animals and animal products curbed • Export of animals and animal products to S. Sudan has moved from illegal to formal trade • Risk of entry of foreign diseases including trans boundary animal diseases (TADs) minimized • Transmission of animal diseases from one district/sub-county to another reduced 	
<p>Animal identification and traceability</p>	<ul style="list-style-type: none"> • Was piloted in 7 districts of Karamoja region with involvement of all stakeholders including Local Government, politicians and MAAIF. • Animal identification was done using boluses which have electronic chips which are inserted in the rumen of cattle from 6 months of age. • The Office of the Prime Minister (OPM) contracted LR Group to insert the boluses and it trained four MAAIF staff how to input and read data from database. • LR Group gave all pilot districts the necessary equipment to insert boluses in all cattle above 6 months of age and work is on-going. <p>Outcomes:</p> <ul style="list-style-type: none"> • Capacity to trace stolen animals to the original owner/kraal enhanced • Capacity to track animal movements in Karamoja region improved 	<p>The exercise needs more funding to extend it beyond Karamoja region</p>
<p>Regulations enforced during animal quarantine restrictions</p>	<ul style="list-style-type: none"> • Quarantine restrictions were imposed on 73 districts with FMD outbreaks and many other districts with African Swine Fever outbreaks • Zonal SVIs and MAAIF police maintained vigilance and curbed 	<p>Veterinary Enforcement crew needs motorized transport to increase their coverage in terms</p>

PLANNED INTERVENTIONS	ACHIEVEMENTS (Outputs and intermediate outcomes)	REMARKS
	<p>animal movements during the outbreaks</p> <ul style="list-style-type: none"> Affected district LGs mounted mobile and strategic animal check points to control movement of animals and animal products during the outbreaks 	<p>of districts and stock routes monitoring</p> <p>More veterinary inspectors should be recruited to beef up the team</p>
Tick and tick borne disease control		
<p>Key interventions :</p> <p>Surveillance for tick-borne diseases undertaken</p> <p>Investigate tick resistance to Acaricide in 10 districts</p> <p>Carry out Acaricide analysis in central and western districts</p>	<p>Outputs</p> <p>Surveillance for tick and tick borne diseases undertaken in 50 districts.</p> <p>Five hundred and twenty dip wash samples were analyzed for Acaricide concentration</p> <p>Outcome</p> <p>ECF remains the commonest and most limiting TBD followed by anaplasmosis</p> <p>Resistance to pyrethroids widespread in western and central parts of the country but not in eastern and northern. Amitraz are still effective but face a similar fate due to misuse. Eighty six point three percent (86.3%) of acaricide specimen analyzed were below normal concentrations, 27% above concentrations and only 44% had normal concentrations</p> <p>Recommendations have been done towards improvement of acaricide concentration, tick control and tick borne diseases control.</p>	<p>Insufficient funds for surveillance and surveys</p>

Table 49: Performance versus Targets Achieved

Tsetse and Trypanosomiasis control			
Issue	Planned	Achieved	Remarks
Strengthening capacity for data collection, analysis, dissemination for decision support	For the year 2014/15 we planned to build capacity of at least 30 entomologists.	35 District Entomologists were trained in Data management and Geospatial analysis. These were selected from the districts of Adjumani, Amuru, Arua, Maracha, Gulu, Hoima, Dokolo, Kalangala, Kitgum, Koboko, Masaka, Masindi, Moyo, Nakasongola, Zombo, Oyam, Yumbe, Lira, Pader, Abim, Kotido, Kaabongo, Mukono, Lamwo, Alebtong, Kiryandongo, Buliisa, Nebbi and Buvuma.	This staffs are now able to collect and analyse data using standardised approaches. This has greatly supported planning, implementation, monitoring and evaluation of tsetse and trypanosomiasis control operations.
	Procurement of Equipment: 5000 tsetse control traps and 30GPS units to support data collection for decision support.	2000 tsetse control traps and 30GPS units procured	Equipment is being used to collect GIS-based entomological data for decision support
Creation of enabling environment for tsetse and trypanosomiasis control through policy formulation	Formulate policy for tsetse eradication and trypanosomiasis elimination and develop a strategy for policy implementation	A National policy on tsetse eradication and trypanosomiasis elimination was formulated and the strategic plan for the policy implementation was developed.	The policy was cleared by MAAIF Top Policy Management and awaits cabinet clearance.
Tsetse control / eradication	Undertake tsetse control activities in 20 high tsetse and trypanosomiasis risk districts	A total of 17419 insecticide treated tsetse targets were deployed in selected parts of Arua, Maracha, Koboko, Yumbe and Moyo covering an area of 2500km ² .	Monitoring results indicate tsetse reduction by over 70% in intervention areas.
	using community based technologies	Use of application of insecticide on livestock for tsetse control was promoted through spraying by communities; – 120,000= cattle were	Community involvement through the 30 youth and 30 Women model in each of the five districts for laying

Tsetse and Trypanosomiasis control			
Issue	Planned	Achieved	Remarks
		sprayed within four districts of Lango sub region (Lira, Dokolo, Alebtong, Apac) <ul style="list-style-type: none"> - 50, 000 in Kaberamaido - 12,010 in Luuka and Kamuli 	traps and sensitization of the mass about tsetse & Trypanosomiasis through 7 District focal persons. Fly population were reduced on average to less than 1 fly per trap per day)in the intervention areas
	Tsetse mass rearing:	A tsetse colony is being established at NaLIRRI – Tororo to support the tsetse eradication campaign. Supportive studies are on-going to perfect tsetse mass rearing	This is an IAEA / GOU supported pilot project to demonstrate the use of the Sterile Insect Technique (SIT) as part of AW-IPM to eradicate tsetse flies on Kalangala Islands.
Awareness and advocacy	Design, produce and disseminate awareness materials for tsetse control in West Nile region of Uganda	<ul style="list-style-type: none"> - Produced and disseminated 5000 brochures and 15,000 posters. all translated in local languages - Conducted radio talk shows - Documentary was produced on tsetse and trypanosomiasis - 25,000 local community members were sensitized on tsetse and trypanosomiasis 	The dissemination of these materials has promoted community involvement in the on-going tsetse control activities in West Nile region
Coordination	Conduct cross-border tsetse and trypanosomiasis control harmonization meetings	Hosted stakeholders from DRC, South Sudan and development partners to develop and harmonize areas of regional collaboration in tsetse and trypanosomiasis control	Regional project (UG-DRC-South Sudan) is being formulated for funding. Data sharing among the three countries is being undertaken for better decision making

h) How different stakeholders have contributed to the reported performance

- i. The International Livestock Research Institute (ILRI) Improving pig health by designing protocols to control Africa Swine Fever. The institution in addition undertook research on prevalence and control of the *Taenia solium* (pork tapeworm) and training of farmers, slaughterers and pork inspectors to improve pork safety through research.
- ii. The African Union of Inter-African Bureau of Animal Resources supported control of trade sensitive diseases through disease surveillance, laboratory and field diagnosis and capacity building, standard operating procedures among others.
- iii. Food and Agriculture Organization (FAO) supported disease control through procurement of vaccines, supporting surveillance and capacity building
- iv. USDA/DTRA/IAEA/JICA supported in capacity building and equipping the NADDEC lab

i) Tsetse and Trypanosomiasis control

Table 50: Stakeholder Involvement

S/n	Stakeholder	Roles / contribution
1	Liverpool school of tropical medicine / BMGF	Provision of both technical and financial support for tsetse control activities in West Nile region
2	FAO	Supported the training of entomologists in data collection and also provision of GPS units
3	Private sector	Provision of inputs
4	IAEA	Provision of equipment, training and expertise
5	WHO	Provision drugs and equipment for sleeping sickness control
6	Universities	Research and surveillance
7	PATTEC / EAC	Promotion of regional coordination
8	Local Governments	Provision of personnel to implement activities

j) The extent to which key issues planned to intervene have been addressed and what remains to be done

- i. Overall the interventions undertaken focused on high risk areas to ensure population protection. Such interventions need to be expanded to cover the entire tsetse belt. Thus, a phased systematic programme for tsetse and trypanosomiasis elimination involving an Area-Wide Integrated Pest Management approach (AW-IPM) has been developed through projects;
- ii. Uganda tsetse and trypanosomiasis eradication project covering 30,000km² of south eastern Uganda costed at USD13million (pipeline project with Ministry of Finance)

Table 51 below shows numbers of animals and animal products inspected and certified for export.

Table 51: Quantity and destination of animals and animal products inspected and certified for export.

	No. of consignments inspected and certified	Total Quantity of product exported	Destination countries	Exporting Companies
UHT milk (Its)	20	1,565,360	Kenya Tanzania, D. R. Congo, Rwanda	Sameer Agriculture and Livestock, GBK, Jesa Farm Dairy
Milk powder (kg)	28	1,721,160	Kenya, Qatar, Syria, Zambia, Tanzania, Japan	Sameer, Pearl Dairy Farms
Yogurt (kg)	26	243,450	S. Sudan	Sameer Agriculture and Livestock
Ghee (kg)	71	1,063,483	India, Egypt, DRC	Pearl Dairy Farms, Amos Dairies
Cheese (kg)	11	2,150	D. R. Congo	-
Butter (kg)	9	3,155	D. R. Congo, Kenya, South Sudan	Sameer
Butter oil (kg)	6	596,720	Nepal, Kenya	Pearl Dairy Farms
Casein (kg)	54	911,000	USA	Amos Dairies
Meat and meat products				
Mutton-sheep meat (kg)	17	10,240	D. R. Congo, South Sudan, UAE	Fresh Cuts,
Chevon-goat meat (kg)	24	8,283	S. Sudan, UAE, D. R. Congo	Fresh Cuts
Beef (kg)	40	76,046	D. R. Congo, South Sudan, Somalia	Fresh Cuts
Pork (kg)	18	20,908	D. R. Congo, South Sudan	Fresh Cuts
Poultry and poultry products				
Day old broiler and layer chicks (Nos.)	33	241,916	Rwanda, D. R. Congo, Burundi, Tanzania, Kenya, Ethiopia	Biyinzika Poultry Breeders, Ugachick Poultry Breeders
Dressed chicken (kg)	11	36,590	D. R. Congo	Fresh Cuts
Table eggs (Nos.)	38	1,753,250	S. Sudan, Burundi, Mali	
Hatching eggs (Nos.)	1	2500	Rwanda	Butenga Farmers

		No. of consignments inspected and certified	Total Quantity of product exported	Destination countries	Exporting Companies
Hides and skins, and horn products					
Wet blue hides (kg)	206	7,518,899	Switzerland, Turkey, China, Pakistan, Italy, Kenya, India,	Hoopoe Trading Ltd., SWT Industries, Jambo Tannery, Skyfat Tannery,	
Limmed untanned hides strips & trimmings (kg)	21	425,600	S. Africa	Tannery Waste Management	
Wet blue skins (kgs)	68	1,490,017	Switzerland, Pakistan, China, Italy, India	Hoopoe Trading Ltd, SWT Leather Industries, Skyfat Jambo Tannery	
Wet blue chrome tanned leather (kg)	91	1,579,079	China, Kenya, Italy	Leather Industries Uganda Ltd, Elgon Leather	
Polished horns, horn tips & horn crafts (kg)	60	199,945	Vietnam, France, UAE, Italy, Germany, Denmark, Austria, The Netherlands, China, USA	Horn Products (U) Ltd, Uganda Small Scale Association, Hornbiz, Kasabrint, Guanghua International Investments, Shang Industrial Co.	
Honey and products					
Honey (kg)	3	180	Denmark, Belgium, Rwanda, Zimbabwe	Bee Natural Uganda, Individual promoters	
Wax (kg)	1	50	Rwanda		
Live Animals					
Day old broiler and layer chicks (Nos.)	33	241,916	Rwanda, D. R. Congo, Burundi, Tanzania, Kenya, Ethiopia	Biyinzika Poultry Breeders, Ugachick Poultry Breeders	
Hatching eggs (Nos.)	1	17500	Rwanda, Burundi	Biyinzika Poultry Breeders, Butenga	

	No. of consignments inspected and certified	Total Quantity of product exported	Destination countries	Exporting Companies
				Farmers
Cattle (Nos.)	30	2,297	Rwanda, Burundi, D. R. Congo	Butsyoro Dairy Farm, Godwin, Presidential Farm, Kangwa NAGRC, Dairy Kangwa
Goats (Nos.)	2	911	Rwanda, Burundi	Butsyoro Dairy Farm, Godwin, Dairy Kangwa
Combrough Pigs (Nos.)	1	3	Kenya	Animal Care Center
Wild birds (Nos.)	3	945	Hungary, USA, Turkey	Hasena Investments
Wild snakes (assorted vipers)	2	129	S. Africa, The Netherlands	SS Breeding Farm

Table 52: Performance against Targets

PLANNED INTERVENTIONS	ACHIEVEMENTS (Outputs and intermediate outcomes)	REMARKS
Promotion of animals and animal products		
The quality and safety of meat, milk, hides, skins, eggs and other animal products in various regions of the country assured through inspection to enable improved marketing locally and for export	<p>A total of 1,621 consignments of live domestic and wild animals, and animal products including milk and milk products, meat, hides and skins, leather, horns, eggs, chick and chicken were inspected and certified for export</p> <p>Amos Dairies, Pearl Dairy Farms, Sameer Agriculture and Livestock and GBK factories inspected for compliance hygiene standards as part of the DDA quality awards 2015</p> <p>Inspection of meat, animals and animal products in markets, abattoirs, slaughter slabs, butcheries and urban centers carried out in all 112 districts by district LGs</p> <p>Outcomes;</p>	Need adequate funding to continually provide technical support to old and upcoming processors and exporters of animals and animal products
	<ul style="list-style-type: none"> increase in diversification of exported animal products, new products being milk casein, 	

PLANNED INTERVENTIONS	ACHIEVEMENTS (Outputs and intermediate outcomes)	REMARKS
	<p>butter oil, goat and sheep meat, and leather products</p> <ul style="list-style-type: none"> • penetration of new markets for milk, leather and meat products • Increased market opportunities for exporters • Increase in opportunity for the country to earn foreign exchange in exports • These districts benefitted directly from exporting animal products, including Kampala, Busia, Jinja, Bushenyi, Mbarara, Ibanda, Soroti, Kumi, Amuria, Bukedea, Nakasongolo, Kiryandongo, Wakiso, Mukono and Arua. • Minimized risk of transmission of diseases from animals to humans through animal products 	
Improved market access for livestock and livestock products		
<p>Creating an enabling environment and guidelines for the development of areas involved in obtaining livelihood through the pastoralism related activities especially Basongora in mid-Western Uganda</p> <ul style="list-style-type: none"> • Complete land surveys • Basongora community sensitized 	<ul style="list-style-type: none"> • Cadastral survey of 11,000 acres of land undertaken to locate the position of the land, establish total acreage resettled, establish acreage of land for each group and identify individuals that may need to be compensated. • Deed plan processing that will lead to issuance of land titles has started • The process of installing highly visible boundary pillars is underway. <p>Outcomes:</p> <ul style="list-style-type: none"> • Land conflicts between pastoralists and cultivators resolved • Peaceful co-existence among the cultivators and pastoralists • The energy of the population is currently focused on agricultural activities not conflict 	<p>Need funds to compensate those identified for compensation</p> <p>Sensitization about peaceful co-existence should be done continually</p>
<p>NAGRC&DB Key interventions: 1. Increasing meat production and productivity through genetic and nutritional improvement,</p>		
<p>a) Genetics for meat production improved Cattle 1. Provide 1750</p>	<p>Outputs</p> <ul style="list-style-type: none"> • 1891 improved calves were produced at NAGRC and DB farms and are being reared for future extension to farmers. • 41068 Pure breed exotic cattle imported 	<p>Made possible by new liquid nitrogen plant at NAGRC</p>

PLANNED INTERVENTIONS	ACHIEVEMENTS (Outputs and intermediate outcomes)	REMARKS
<p>improved calves from NAGRC farms to farmers on demand driven basis</p> <p>Goats</p> <ul style="list-style-type: none"> ❖ Distribute 7,532 Female Mubende goats from Sembeguya goat multiplication project ❖ Production of 1000 breeding goats for distribution to farmers under NAGRC&DB. <p>Pigs</p> <p>Production of 200 Comb rough piglets and extended to farmers in the country.</p> <p>Poultry</p> <p>Production and distribution of 840,000 Kuroiler chicks under NAGRC&DB.</p>	<p>through Malaba, Busia, Lwakhakha, Entebbe and Katuna</p> <ul style="list-style-type: none"> • Eight hundred five (805) kids of Mubende, Small East African boar goat and appropriate crosses were produced for future extension to farmers at NAGRC farms. <p>Two hundred and eleven (211) piglets of Camborough breed were born and extended to farmers in Wakiso, Gulu, Mukono, Soroti, Kamuli, Buikwe, Kampala, Masaka, Lira, Kasese, Kayunga, Pallisa, Jinja and Mbale.</p> <p>Produced and distributed ;Two hundred and ninety thousand, two hundred and twelve birds (290,212) to 53 districts of Uganda including Kenya. Farmers and 13 Mother Units⁵. Fourty four percent of the total birds produced were extended to female farmers for gender balance and budget crosscutting issues.</p> <ul style="list-style-type: none"> • 96395 Day old chicks parent stock imported through Busia, Katuna, Entebbe and Malaba • 2031 Day old Turkeys imported through Entebbe and Malaba <ol style="list-style-type: none"> 1) Maize Silage 526 acres and by end of the year 2) High breed 79 Elephant grass 36 acres 3) Lablab 6.25 acres 4) Green leaf Desmodium 1 acre. 5) Panicum maxima 1 acre. 6) Centrosema 5 acres. 7) Rhodes Grass 20 acres. 8) Brachiaria Brithantha 2 acres. 9) Wagabolige Potato vines 2 acres 10) Mukuna 3 acres. 11) Forage soghum 1 acre 	<p>Availability of water through desilting contributed to the good performance.</p> <p>The performance was 80.5% however, the shortfall of 195 kids was due to Lack of suitable housing for the kids which led to high mortality. There was over performance due to increased care new stock of pigs.</p> <p>Under performance due to the delayed restocking of a new line of parent stock and there is an urgent need to build new</p>

⁵ Kuroiler chicks distributed to : Arua 420 Buikwe 2,305, Bukedea 5,406, Busia 5,437, Busoga 2,885, Butaleja 250, Butambala 350, Eldoret 816, Eldoret – Kenya 510, Gulu 13,690, Iganga 510, Jinja 41,501, Kabale 4,614, Kabarole 1,284, KajoKeji-S.Sudan 2,060, Kalangala 1,422, Kalungu 204

PLANNED INTERVENTIONS	ACHIEVEMENTS (Outputs and intermediate outcomes)	REMARKS
<p>Facilitate importation of exotic layer and broiler parent stock.</p> <p>2.Improved feeding and nutrition: Evaluation and multiplication of improved pasture and fodder germ-plasm on NAGRC farms by establishing 500 acres.</p> <p>Production of animal feeds Under NAGRC farms;</p> <ul style="list-style-type: none"> • 300 tons of quality animal feeds produced. • 6,000 bales of hay produced. <p>• Construct Water for livestock facilities enough for 400,000 livestock units for UMPCU under PPP provided (Maddu, Gomba, Isingiro, Nakaseke)</p> <p>• Train all veterinary extension staff in feeding for beef production</p> <p>• Facilitate the</p>	<p>12) Caliandra 3000 seedlings. 13) Soya bean 4 acres. Three hundred and sixty (360) tons of silage and Fifteen (15) tons of concentrates were produced and the science was extended to 2000 farmers. This improved the herd performance on NAGRC farms and technology was extended 2000 farmers and students from 10 districts.</p> <p>Seven thousand (7000) bales of hay each weigh 35 Kgs (245 Metric tons).This has improved animal nutrition condition of animals and improved conception rates.</p> <ul style="list-style-type: none"> • Established water reservoirs for 400,000 livestock units for UMPCU under PPP (Maddu, Gomba, Isingiro, Nakaseke) • 70% of the veterinary staff trained in feeding for beef production • Establishment of ultramodern animal feeds plant with capacity of 10 tons/hour 	<p>structures since CAA has taken land where poultry structures are.</p> <p>There was over performance due to improved mechanization of tractors and implements from EAAPP and MAAIF.</p> <p>There was over performance as a result of two additional tractors and implements from MAAIF.</p> <p>One additional hay baler was received from EAAP and became functional in FY 2014/15.</p>

PLANNED INTERVENTIONS	ACHIEVEMENTS (Outputs and intermediate outcomes)	REMARKS
<p>establishment of ultramodern animal feeds plant with capacity of 10 tons/hour</p>		<p>Cooperation and organised farmers under UMPCS enabled this to be achieved.</p> <p>Limited availability of funds to train all staff</p> <p>Made possible by direct foreign investment opportunity sourced by Biyinzika Poultry International</p>
<p>b) Increasing access to markets through provision of certification services, market infrastructure</p>		
<p>1) Provision of infrastructure for marketing, processing and value addition: Facilitate private sector to build one poultry and one beef slaughter facilities</p> <p>Carry out inspection and certification of livestock exports</p> <p>2. Provision of an enabling environment</p>	<p>Outputs</p> <ul style="list-style-type: none"> • Poultry slaughter house built in Nakaseke with capacity to slaughter over 10,000 birds per day. • A cattle Export slaughter abattoir built near Bombo • Constructed Quarantine Stations Border posts: Elegu / Bibia, Oraba, Mutukula • Facilitated export of livestock products through inspections of exports of various products as indicated in table 7. • Provided office accommodation for UMPCU and RELINE • Meat development bill and Animal feeds bill finalised <p>Outcomes</p> <ul style="list-style-type: none"> • Increased exports of meat and by products as indicated in table 7 	

3.3.3.7 How different stakeholders have contributed to the reported performance

- i. A memorandum of understanding was signed between AU-IBAR and government of Uganda represented by MOFPED and MAAIF through which AU-IBAR committed US \$ 190,000 towards veterinary policy and legislation review.
- ii. AU-IBAR trained the DAR, ACVI and UVB Registrar on policy formulation and review process. In addition, AU-IBAR trained ACVI and PVI/Regulation in harmonization of Veterinary legislations in the IGAD region
- iii. Animal producers and traders who invested in the various enterprises and continue to comply with national and international regulations.
- iv. Processors of the various animal products have not only invested in processing and reaching international market standards, but also in searching and attaining lucrative markets for animals and animal products thus contributing to the national poverty eradication efforts.

3.3.3.8 Key challenges in the Livestock Subsector during FY 2014/15

- i. Asymmetric growth in the dairy industry
- ii. Poor genetic potential for production of most indigenous livestock
- iii. Endemic diseases
- iv. Unregulated feed industry.
- v. The primary input in animal production (Pasture) is not an investment priority.
- vi. Scarcity of water for livestock
- vii. Inadequate infrastructure for livestock production, processing and marketing
- viii. Lack of quarantine infrastructure at ports of entry/exit makes it impossible to hold incoming/outgoing animals and subject them to clinical and laboratory testing for a mandatory period of 30 days to ensure they are free of disease to minimize transmission of disease between countries.
- ix. Lack of vehicles and inadequate logistical support for veterinary inspection. Veterinary inspection requires officers to reach out to farms, markets, processing and handling establishments to inspect and also provide technical support so as to enhance compliance with local and international market standards
- x. Reliable internet connectivity is needed to enhance maintain linkage with URA ASYCUDA World and inspect animals and animal products in tandem with URA without causing delays in goods clearance.
- xi. Lack of laboratories at ports of entry/exit to facilitate inspection of animals and animal products
- xii. Inadequate human resource for veterinary inspection
- xiii. Low effective domestic demand for quality animal products.
- xiv. Slow policy and legislative formulation and review processes
- xv. Unreported interventions in the sector by other stakeholders
- xvi. Over fragmentation of land in many parts of the country
- xvii. The restructuring of MAAIF mistakenly removed a key division (Veterinary Public Health and Marketing) from Department of Animal Production and Marketing. The

Veterinary Public Health and Marketing Division is responsible for issues that affect humans originating from animals and animal products and has been working closely with Ministry of Health , Uganda National Bureau of Standards and the Food safety Desk in National Drug Authority. MAAIF still awaits clearance from Ministry of Public Service re-instate it. The staff of the division were relocated to other departments of the Directorate of Animal Resources but the original mandate for the division is still not catered for under these departments.

- xviii. The quality and safety of animal products has not been given the attention it deserves by MAAIF in particular the Planning Department and Ministry Administration for some time now yet the mandate of the Directorate of Animal Resources is to support sustainable animal diseases and vector control, market oriented animal production, and food quality and safety, for improved food security and household incomes. Food Security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active (productive) and healthy life (World Food Summit, 1996. In: FAO 2006. Policy Brief). The foodborne illness and deaths are on the rise in Uganda as a result of eating contaminated food with agro-chemicals, microorganisms /toxicants, veterinary drug residues among others e.g. (aflatoxin in grains -maize, g.nuts, in animal-poultry feeds, agrochemicals on tomatoes, capsicum, green vegetables, and drug residues in meat, fish, chicken, and eggs). In a study carried out in Uganda found that 54% of all Ugandan adults are malnourished and majority of children under 5 years are stunted (The Report on the Cost of hunger in Uganda, 2013).
- xix. During the FY 2014/15, MAAIF did not avail funds for the planned activities for livestock food safety and quality issues;-one major activity was to develop the Livestock Identification and Traceability System (LITS) in Uganda, not even little funds for Inspection of the slaughter facilities and meat processing establishments for compliance with Uganda standards were availed.
- xx. There is inadequate engagement of the stakeholders involved in activities of the animal sub-sector yet the engagement of the stakeholders is key if the livestock sub- sector is to be improved. There is need to know the key stakeholders in livestock value chain activities and hold exhaustive regular discussions with them , get their commitment and eventually establish what each of the key stakeholders is contributing towards food security and the national economy every year.
- xxi. Data in the livestock subsector is scanty and therefore adequate national planning for the sub-sector is practically inadequate.

3.3.3.9 Recommendations

- i. The Division of Veterinary Public Health and Marketing organisational structure in Ministry of Public Service should be fast-tracked by the Human Resource Department of MAAIF and cleared so that the division of Veterinary Public Health and Marketing can function as before.
- ii. MAAIF should focus on quality and safety of animal products and also crop and fish since it is one of the three core areas in its mandate and allocate appropriate funds for

the activities so that we prevent human sickness and reduce the disease burden on the population and the country, instead of spending so much on medicines and hospitalization of sick people. (Remember, prevention is better than cure).The Ministry is supposed to ensure that animal products are safe and of high quality for the consumers.

- iii. MAAIF should support the establishment of commodity platforms so that key stakeholders along the value chain are engaged and plan for the agricultural sector collectively. There is a project in MAAIF on commodity platforms but the key staff in MAAIF do not even know what it has been doing in this area. The commodity platforms will provide the needed data and information that MAAIF needs to broaden reliable data/information sources for subsector planning and delivery of services.
- iv. Strategic surveys/studies in specific areas as identified by stakeholders in the subsector and planned periodic livestock census on schedule will provide the needed data and information for proper planning for the subsector that will continuously improve the subsector.
- v. Adequate financial resources for the subsector should be made available every year.

MAAIF Agencies

3.3.4 NARO

3.3.4.1. Introduction

The National Agricultural Research Organisation (NARO) is mandated to provide oversight, coordinate and implement research for development in all aspects of crops, livestock, fisheries, forestry and natural resources. Its research agenda is demand-driven, client-oriented and market-based. The ultimate goal of the Organisation is to enhance the contribution of agricultural research to sustainable agricultural productivity, sustained competitiveness, economic growth, food security and sustainable natural resource utilisation. In pursuance of its mission and vision, NARO is guided by its core values viz. Inclusivity, Subsidiarity, Transparency, Accountability and Excellence that are espoused in its entire constituent Public Agricultural Research Institutes (PARIs).

3.3.4.2 Key issues to be addressed through interventions of NARO

- i. Technology generation
- ii. Research – Extension- Farmer interface
- iii. Institutional capacity strengthening

The outputs are delivered through core funding to PARIs and competitive grants, also, to other research providers.

3.3.4.3 Stakeholder participation

The Organisation receives support mainly from the Government of Uganda (GoU), International Development Association (IDA), International Fund for Agricultural

Development (IFAD), Global Environmental Facility (GEF) through the Agricultural Technology and Agribusiness Advisory Services (ATAAS) Project⁶ and Eastern Africa Agricultural Productivity Project (EAAPP)⁷ which are designed to support the implementation of the research programmes of NARO. It also generates Non-Tax Revenue (NTR) from its operations.

3.3.4.4 Budget Performance for FY2014/15

Table 53: Budget Performance for FY 2014/15

Funding Source	FY 2014/15 (in UGX Bn)			
	Original MTEF	Suppl. Funding	Revised MTEF	Cumulative Releases
GoU (Rec)	27.74		27.74	27.59
GoU (Dev)	9.13		9.13	9.13
ATAAS (IDA, IFAD, GEF)	75.66		75.66	31.8
EAAPP (IDA)	35.00		35.00	27.82
NTR	4.98	2.11	7.09	1.15
Total	152.51	2.11	154.62	

3.3.4.5 Summary of Achievements for FY 2014/15

Technology Generation	TARGET	Q1	Q2	Q3	Q4	TOTAL
No. of new varieties/ prototypes submitted to Variety Release Committee for release	30	0	0	8	10	18
No. of production technologies generated	90	15	12	36	49	112
No. of research studies under competitive grants scheme	65	41	41	41	41	41
Research extension farmer interface						
No. of technological innovation platforms established/supported		0	5	24	8	37
No. of technological innovations delivered to uptake pathways		0	34	43	66	143

a) Technology Generation

NARO concentrated on the twelve priority commodities recommended by Cabinet and the following have been achieved:

⁶ The ATAAS Project is fully aligned with the Development Strategy and Investment Plan (DSIP) of MAAIF and its strategic focus is consistent with the National Development Plan (NDP). It seeks to enhance agricultural productivity, diversification and value addition, and promote Public-Private Partnerships (PPPs) in service delivery, agribusiness development and Sustainable Land Management (SLM).

⁷ EAAPP is closing in June 2015, with a No Cost Extension granted to December 2015. EAAPP Phase II is dependent on ongoing processes.

Table 54: Strategic Intervention in Priority Commodities

Commodity	Expected Annual Output	Outputs achieved for the period July 2014 to June 2015
<p>Maize</p> <ul style="list-style-type: none"> ● At least 40 new promising hybrids from breeding pipeline identified for validation ● At least 10 MLN resistant inbred lines accessed from Ohio and Hawaii ● Evaluate at least 50 new inbred lines with high combining ability and 150 hybrids in different agro ecologies ● Novel 15 highland inbred lines, 210 populations and 1 hybrid developed ● Establish evaluation trials for 6 WEMA varieties in different agro-ecological zones ● A protocol for kernel screening against mycotoxins developed/optimized ● At least 10 mycotoxin inbred lines acquired, seed increased and evaluated for performance ● Establish varietal adaptation trials for maize varieties in at least 2 zones ● Conduct a maize value chain analysis for Lango and Acholi sub-regions 	<ul style="list-style-type: none"> ● Developed technologies that allow traceability of Breeder/Foundation seed supplied to seed technology uptake pathway; ● Released 3 varieties: UH 5051, UH 5052 and UH 5053. Are highly tolerant to drought, with yield potential of 6-7 tonnes ● Released 3 hybrids: UH5354, UH5355, and UH5301. Are drought tolerant, aflatoxin and weevil resistant ● Two (2) Maize Lethal Necrosis (MLN) tolerant varieties CMLN0086 and CKH10773) submitted for release. 38 MLN resistant inbred lines accessed from Ohio and Hawaii and planted at NaCRRRI for seed increase. ● 1000 drought tolerant hybrids evaluated under high density (Proxy for stress) at NACRRRI. ● 100 maize and leaf samples collected from 16 districts for laboratory analysis of incidence and severity of maize lethal necrosis disease ● 400 new Drought tolerant and disease resistant inbred lines developed from NARS x CIMMYT sources testcrossed to 2 testers of heterotic groups A and B. ● Seven hybrid varieties and 6 WEMA varieties established in Zombo, Arua, Yumbe and Adjumani for adaptation evaluation ● Mycotoxin in maize control methods and technologies identified ● 105 accessions of cereals and legumes comprising 12 species added to the collections in the Uganda National gene bank. 	

Commodity	Expected Annual Output	Outputs achieved for the period July 2014 to June 2015
		<ul style="list-style-type: none"> ● 8 different fertilizer application rates under 75x60cm and 75x30cm spacing's for Longe 5 have been set up in the mid-altitude woodland Savana areas of LACZ – Funded by ATAAS ● 50 samples showing symptoms of maize lethal necrosis (MLN) collected from affected districts; ● 85 accessions were added to the collections in the Uganda National Gene Bank; as well as 105 accessions of cereals and legumes comprising 12 species. ● Collected growth and yield data for maize under different fertilizer application rates in the mid-altitude woodland savannah areas ● 800 Respondents interviewed in a study to identify critical labour points along rice and maize value chain analysis in Lango and Acholi. ● Grain quality evaluation in different options on-going on-station for beans and maize ● Protocols for disease diagnostics in maize assembled and MLND in maize verified for the MCMV virus only ● A multi-location trial has also been established using 8 hybrid maize varieties (PAN 67, Longe 6H, Longe10H, DH04, WS 303, H520, KH 500-43A, FH5160) in Arua, Zombo and Adjumani DFIs
Dairy & Beef	<ul style="list-style-type: none"> ● FMD disease control strategy developed ● Policy brief on FMD control formulated ● Stochastic models predicting outbreaks of CBPP, FMD, PPR and Avian Influenza epidemics in cattle, goats and poultry in 	<ul style="list-style-type: none"> ● Determined acaricidal activity of 3 selected botanicals against ticks in Karamoja and Teso sub-regions ● Promoted Bracharia mulato as animal feed to >300 farmers. B. mulato is palatable and best for forage conservation as hay ● Produced forage seed: Chloris gayana (500 kg), Lablab (600 kg),

Commodity	Expected Annual Output	Outputs achieved for the period July 2014 to June 2015
	<p>Uganda developed and availed</p> <ul style="list-style-type: none"> • Dairy cattle supplementary feed rations based on sorghum stover and Tithonia developed • Nutritional deficiencies in beef cattle diets determined • Mapping of endemic animal diseases conducted in at least three districts • Productive and reproductive performance of Zebu cows established in cattle keeping communities • Efficacy of medicinal plant extracts towards worm and tick control determined • Forage trials for increased dairy productivity established • Livestock management practices for LACZ determined • Livestock production opportunities and constraints in LACZ determined • Forage species evaluated for drought tolerance in the LACZ • On-farm evaluation feeding trials for sorghum stovers and Tithonia established in Lira 	<p>Clitoria ternata (300 kg)</p> <ul style="list-style-type: none"> • A parasite pathogen bank for Theileria parva established at NALIRRI, Tororo • Multiplied and distributed planting material for feed: 1,390,000 Napier grass cuttings (= 140 acres), 650 bags of Bracharia splits and 17,000 Calliandra seedlings in 30 districts • 671 bags of Bracharia splits to youths in National Youth Farmers' Association • More than 100 tons of hay produced and sold • Formulated four beef fattening rations based on molasses, brewers' waste and hay • Strains of Theileria parva, pathogen that causes East Coast Fever (ECF) transmitted by ticks, have been characterized; important in improving the ECF Muguga cocktail vaccine • Draft FMD disease control strategy is in place • Draft document of policy brief on FMD control has been formulated • Collected data on blood and tissue samples from the four CBPP outbreak districts • Data collected for developing stochastic models for predicting outbreaks of CBPP • Collected 80% of geo-climatic data for generating a dynamic Landscape genomic connectivity maps for G. f. fuscipes populations in Uganda. • Harvested over 10 tons of forage sorghum for use in the evaluation

Commodity	Expected Annual Output	Outputs achieved for the period July 2014 to June 2015
	<ul style="list-style-type: none"> ● Efficacy and safety of rGST as a candidate vaccine in East African Short-horn Zebu (EASZ) and Sahiwal/EASZ breeds determined. ● Demand-driven technologies for integrated management of East Coast Fever enhanced ● Ability of GST to induce humoral antibodies, level of antibodies and effect of GST on tick attachment and engorgement assessed ● Re-equipping of the tick colony at NaLIRRI ● Demand-driven technologies for integrated management zoonotic milk-borne pathogens enhanced ● At least 20 acres of forage established for formulation of fattening diets in 4 districts ● At least 5 acres of pasture legumes evaluated for performance in different zones ● On station fodder tree established and maintained at Abi 	<p>of the effect of supplementing lactating animals with feed rations based on sorghum stover and tithonia leaf meal.</p> <ul style="list-style-type: none"> ● Laboratory analysis of wet season fecal samples of beef cattle was conducted and revealed that the diets were deficient in energy and proteins. ● Mapping of endemic animal diseases conducted in three districts; preliminary findings revealed the most prevalent animal diseases include: CBPP, Black quarter, African Swine Fever, Tick borne diseases (East Coast Fever, Anaplasmosis) Trypanosomiasis. ● A baseline survey on the productive and reproductive performance of Zebu cows conducted in the major cattle keeping communities. ● In vivo trial of one medicinal plant extract tested for efficacy towards worm ad tick control. Results showed ethanolic extract of <i>Cassia nigricans</i> had no significant effect on worm burden ● Data from established forage trials for increased dairy productivity shows that biomass yield and maturity rates are higher in Logiri than other places. ● Performance data (disease, milk yield and body weight) for the 3 cows and 3 calves collected; weekly control of external parasites using pour on; deworming and prophylactic treatment of cattle done; ● Conducted a baseline survey to establish current status of parasites, vectors, disease and indigenous management practices for guiding livestock research in LACZ. ● Conducted survey on livestock production opportunities and

Commodity	Expected Annual Output	Outputs achieved for the period July 2014 to June 2015
		<p>constraints conducted in Ntoroko and Kyegegwa</p> <ul style="list-style-type: none"> ● Evaluated some forage species for drought tolerance; among the Grasses, <i>Brachiaria Toledo</i> & <i>B. hybrids II</i> are more resilient; among the legumes, <i>Neotonia wightii</i>, <i>Canavalia brasiliensis</i>, <i>C. Angetia</i> and glycine more resilient. ● Conducted on-farm evaluation of feeding trial for sorghum stovers and <i>Tithonia</i> in Lira district. ● Growth, pest infestation and crop damage data for maize stalk borer determined. ● Experimental data and samples collected for further analysis for the study on evaluating the performance of <i>Tithonia</i> based feed rations on dairy cows ● Data and samples for two seasons collected for documentation lab analysis evaluation for the experiment on performance of the three forage species documented ■ Efficacy and safety of rGST as a candidate vaccine in East African Short-horn Zebu (<i>EASZ</i>) and Sahiwah/<i>EASZ</i> breeds determined. Recombinant glutathione s-transferase(rGST) could be a potential vaccine candidate ■ Dry season feeding major cereal crop residues documented in the Acholi and Lango sub-regions of the Northern and mid-Northern agro-ecological. ■ 10 rabbits have been maintained for feeding ticks ■ Tick colony has been maintained ■ 42 local strains of pathogenic (<i>shiga toxin-producing E. coli</i>) isolated

Commodity	Expected Annual Output	Outputs achieved for the period July 2014 to June 2015
		<ul style="list-style-type: none"> ▪ DNA of local strains has been analyzed ▪ A draft policy brief on control of food poisoning due to pathogenic <i>E. coli</i> in place ▪ Report on pathways for transmission and spread of FMD in place ▪ 60 animals for fattening trail were selected on 2 farms in Nakaseke and 2 farms in Nakasongola District. ▪ Established 30 acres of lablab and brachiariabrizantha in Ngoma sub-county, Nakaseke District. The fields are meant to supplement on the protein and hay resources for formulation of fattening diets ▪ Construction of twelve stance cattle sheds is on going ▪ Maintained 4 acres of pastures for evaluation of performance of different pasture legumes for season • Cattle crush and kraal; seven (7) acres of livestock farm maintained (weeding) • Fodder tree garden established on-station
Bananas	<ul style="list-style-type: none"> • Production and marketing constraints of bananas in Kasese determined • At least 18 banana fertilizer trials established in 3 districts of Kayunga, Masaka and Nakaseke • At least 6 banana mother gardens on BBW management set up in three project districts • Data collected on pest and disease incidences from established on-station trials 	<ul style="list-style-type: none"> • BBW incidence further reduced from 13% to below 10% in Ankole and Kigezi; below 30% in Masaka • Dessert variety resistant to BBW developed • Transgenic banana (dessert type) bio-fortified with Vitamin A and Iron developed; • Two banana varieties released: Kabana 6H and Kabana 7H (60 tonnes Ha-1); • Submitted two matooke hybrids (for M19 and M20) to MAAIF Variety Release Committee (VRC)

Commodity	Expected Annual Output	Outputs achieved for the period July 2014 to June 2015
	<p>in Kamenyamiggo</p> <ul style="list-style-type: none"> • At least 80 plots of matooke hybrids established in 4 districts • At least 2 farmer acceptable high yielding black sigatoka resistant hybrids identified. • Economic impact of BBW in South Western Uganda established • Incidence of banana pests and diseases determined in Bushenyi, Isingiro, Ibanda and Lyatonde districts. • Banana nematode population structure determined in six districts of ankole sub region. Ibanda, Lyatonde and Intungamo had the highest proportion of dead banana roots (22.0-32.57%). • At least 20 consumer acceptable, black Sigatoka resistant new matooke genotypes selected from early evaluation trial (EET) 	<ul style="list-style-type: none"> • A 3 litre double bottle bioreactor, for tissue culture protocols, assembled at NARL, Kawanda • Fourteen (14) consumer acceptable, black Sigatoka resistant new matooke genotypes selected from early evaluation trials (EET) • Conducted survey on production and marketing constraints of banana in Kasese and Kamwenge • A meeting held to review two draft manuscripts on baseline information on the dynamics, constraints and opportunities in crop production and marketing in Urban and Peri-Urban Areas • 18 farmers were selected to host Banana fertilizer trials, initial data sets collected from each host farmer's field • 18 on-farm banana fertilizer trials set up in the 3 districts: Kayunga, Masaka, and Nakaseke. 6 trials per district • 6 banana mother gardens on BBW management, setup in 3 project districts in sub/counties; 400 suckers per district • 2 data sets (initial data and after treatment application) collected on pest and disease incidences from the established on-station trials in Kamenyamiggo • Held 1 core team meeting in MuZARDI, to concertize the experimental design for on-farm trial of the coffee and banana productivity project • 90 plots of matooke hybrids: M9 and of M9, FHIA 17 and M2, established 4 districts • 2 farmer acceptable high yielding, black Sigatoka resistant hybrid

Commodity	Expected Annual Output	Outputs achieved for the period July 2014 to June 2015
		<p>identified</p> <ul style="list-style-type: none"> • Hardening of matooke genotype hybrids: M25, M7, M28, M29, M19 and M20, completed. • Economic impact of BBW in South western Uganda established • 1 survey conducted in western Uganda to assess the impact of crop, livestock and wildlife impact • Incidence banana pests and diseases determined in Bushenyi, Isingiro, Ibanda and Lyatonde districts. • BXW is the most devastating disease in all the districts with mean prevalence of 25.2% and mean incidence of 3.24% • Mbarara ZARDI has determined banana nematode population structure in six districts of Ankole sub region. • Banana root nematode damage was significantly higher (6.4%) in Isingiro and lower in Mbarara & Rubirizi. • Fourteen (14) consumer acceptable, black Sigatoka resistant new matooke genotypes selected from early evaluation trial (EET) • 2 banana lines of Nakasabira with nematode resistance identified from Confined field trial • <i>Two bio-reactors for banana and cassava fabricated: misting and air bubbling type; experiments for industrial disinfectants, and growth retardants initiated</i>
Fish	<ul style="list-style-type: none"> • Cage fish farming introduced in the crater lakes of Western Uganda • Brochures on cat fish farming developed and 	<ul style="list-style-type: none"> • Cage fish farming introduced and adopted in crater lakes of western Uganda. Rwijongo Lake has over 12 stocked cages with tilapia. • Developed and distributed brochures on catfish performance in

Commodity	Expected Annual Output	Outputs achieved for the period July 2014 to June 2015
	<p>distributed</p> <ul style="list-style-type: none"> • Fish formulation developed using bean meal, fish meal, soy meal, maize bran, cassava flour, wheat pollard, fish oil, salt, mineral and vitamin premix, lysine, methionine and preservative. • A fish hatchery with four nursing tanks completed at Abi ZARDI • Microbiological analysis for bacterial contamination of salted Angara determined • Evaluation trials for catfish farming under crater lake conditions conducted in SWHAEZ 	<p>cages.</p> <ul style="list-style-type: none"> • Formulation software and formulae for 30%, 35% 40% and 45% CP was developed using bean meal, fish meal, soy meal, maize bran, cassava flour, wheat pollard, fish oil, salt, mineral and vitamin premix, lysine, methionine and preservative. The study is still on going. • Fish samples sourced from Lake Albert and submitted to Chemiphar Uganda for fatty acid analysis • Stocked four cages in Onigo D fishing bay with Tilapia fingerlings • A fish hatchery with four nursing tanks completed at AbiZARDI • Conducted a microbiological analysis for bacterial contamination of salted Angara • Two fishponds repaired, de-silted, banks rebuilt. Flood control bank established • Drainage system for fishponds completed. • 95,000 sex reversed Tilapia produced and 70,000 fry distributed to 14 farmers • Six fish ponds maintained in Kabale. 300 juveniles stocked for breeding • Six cages have been procured and installed in Lake Bunyonyi. • Procurement of cold tolerant fish has been initiated- • Evaluation of catfish farming under crater lake conditions performed – catfish trials indicated 7 times increase in the size at stocking

Commodity	Expected Annual Output	Outputs achieved for the period July 2014 to June 2015
Coffee	<ul style="list-style-type: none"> • At least one acre of mother garden of the 7 lines of coffee maintained on station; • 1 acre of Robusta and Arabica coffee lines for demonstration maintained on station 	<ul style="list-style-type: none"> • 83 mother gardens, each of 350 to 700 coffee bushes, for multiplication of 7 coffee wilt resistant varieties, established in the country • 10 Robusta coffee varieties resistant to coffee wilt disease are in advanced stage of multi-locational trials in different agro-ecologies for wider adaptation; average yield 2 to 3 tons/ha, 1 at 3 to 5 years of establishment • 4 Arabica coffee varieties resistant to Coffee Rust with average yield of 5 tons/ha under multi-locational trials. • Generated 5,572 plants by cuttings of which 1,477 were given to nursery operators and 4,472 available for dissemination • One Poster and one brochure on improved coffee production and management practices produced. • Poster presentation at coffee show in Kiruhura district • Maintained half an acre of mother garden of the 7 lines of coffee on station; maintenance of 1 acre of Robusta and Arabica coffee lines for demonstration
Cotton	<ul style="list-style-type: none"> • At least 1 foliar fertilizer for improved cotton yields identified • Soil fertility amendments that enhance cotton productivity identified • Effective seed dressing chemicals for control of wilts and other seedling diseases in cotton 	<ul style="list-style-type: none"> • The profile of soil nutrient status and performance of cotton at flowering is being determined. • Data on cotton growth was recorded 4 times from cotton treated with different rates of Tithonia at NaSARRI. • <i>Mucuna puriens</i> was cut down and spread in the field in October followed by planting cotton at Bukedea, Kuju, Usuk and Kaberamaido TVCs.

Commodity	Expected Annual Output	Outputs achieved for the period July 2014 to June 2015
	<ul style="list-style-type: none"> • Distribution map of cotton wilts and their races in Uganda 	<ul style="list-style-type: none"> • Agronomic data on squaring, flowering in PYTs and AYT's collected. • One acre of cotton without off types was planted and diseased plants rouged off. • Cottonseed was dressed with six different chemicals (Seed Plus, Cruiser Extra, Apron Star, Maxim, Nordox and Bronopal) each at two rates and planted at NaSARRI. • The performance of cotton one month after treatment with 6 foliar fertilizers from four sites was investigated. • Four data sets were collected from cotton that received different treatments at NaSARRI. • Prevalence of cotton wilt diseases in the West Nile and Western cotton agro-ecologies determined
Tea	<ul style="list-style-type: none"> • Tea pests and diseases incidence, prevalence and severity in the country mapped • Appropriate IPM practices for thrip pest and xylaria disease generated • Tea productivity on major soils in the zone determined • Tea nursery for production of at least 200,000 plantlets established 	<ul style="list-style-type: none"> • Rehabilitated tea fields at Rwebitaba ZARDI, mapped and identified all the 276 clones available • Farmers in Kigezi sub-region accessed 6 million tea cuttings from Rwebitaba ZARDI for planting • Nursery with production potential of 120,000 seedlings established at Rwebitaba ZARDI • Field sanitation, by uprooting and burning infected trees, conducted for control of Xylleria spp. a disease that causes wilting of tea trees; incidences of 15-20% have been reported • <i>Improvement of tea production and productivity</i>: Information on pests and disease severity on existing clonal field trials generated; • Information on pests and diseases incidence, prevalence and severity

Commodity	Expected Annual Output	Outputs achieved for the period July 2014 to June 2015
		<p>generated in Kabarole and Kyenjojo.</p> <ul style="list-style-type: none"> • Information on integrated thrips disease management generated • Tea productivity on major soil types in Mitooma, Rubirizi, Sheema and Buhweju districts was documented. • A tea nursery for producing 120,000 plantlets established; about 34,660 cuttings of selected clones planted for trial establishment; • Application of NPK in on station tea fields at 300, 70, 60 kg/ha/season of N, P and K respectively had significantly high leafy yields of 2.6 t/ha at two months after application.
Poultry	<ul style="list-style-type: none"> • Establish an experiment at Kabanyoro on cost-effective aflatoxin binding poultry feed rations • Experiment to evaluate the effect of Bentonite supplementation performance of broilers fed aflatoxin contaminated feeds established • Micro-satellite DNA sequencing carried out for the indigenous chicken from different agro-ecological zones 	<ul style="list-style-type: none"> • Poultry experimental units at Kabanyoro renovated in preparation for the trial on cost-effective aflatoxin binding poultry feed rations • At least 2 grams of aflatoxins produced in the laboratory • An experiment to evaluate the effect of Bentonite supplementation performance of broilers fed aflatoxin contaminated feeds initiated • Micro-satellite DNA sequencing carried out for the indigenous chicken from different agro-ecological zones • Data collection on productivity parameters (disease resistance, egg production, growth rate) of local chicken ongoing • 500 layers chicks stocked for experimentation
Cassava	<ul style="list-style-type: none"> • Disease & pest resistance of cassava seedlings in various families determined • Nutrient requirements and nutrient-use-efficiencies of diverse elite cassava genotypes determined 	<ul style="list-style-type: none"> • Two cassava varieties filed for release. NASE 20 (TZ130) and NASE 21 (MM06/130) with yields of 23 t/ha and 20 t/ha fresh respectively; tolerant to CBSD and resistant to CMD • Improved genetic stocks with enhanced beta carotene generated • Distributed 102 million cassava cuttings to farmers

Commodity	Expected Annual Output	Outputs achieved for the period July 2014 to June 2015
	<ul style="list-style-type: none"> • Soil nutrient requirements for cassava agro ecologies of Uganda mapped • Foundation material of elite cassava genotypes indexed and multiplied • Variety adaptability trials established for cassava varieties (TIME 14, and NASE14) on farm in Masindi • Second fertilizer response trial for cassava established on-station at ABI ZARDI • Adaptive evaluation trials planted in Nebbi, Moyo, Maracha and Zombo districts. • Establish cassava on-station evaluation trials 	<ul style="list-style-type: none"> • Remodelled, for enhanced effectiveness, the motorised cassava chipper • Developed multiple cassava based products • Developed technology for adding value to cassava solid to produce briquettes. • 3,000 open-pollinated cassava botanical seeds produced by 22 parental lines in 2 crossing blocks collected and preserved to break dormancy • 6 beds of seed nursery, each with 500 seeds established • Data on performance of genotypes collected • At least 17 genotypes collected, indexed and maintained invitro • Soil mapping in 6 agro ecologies conducted and soil samples analysed • Spacing trials for cassava (TME14, and NASE14) establishment • Variety adaptability trials established for cassava varieties (TIME 14, and NASE14) on farm in Masindi • 6 genotypes virus indexed, 12 acres of multiplication blocks established at 2 locations and data collected • A new crossing block for cassava established with West Nile local varieties such as Lomelombe, Omoo/Bali, Okukomaku, Joyo, Amua and improved varieties; Tme 14, Nase 14, MH962961 and Tme204 • Second fertilizer response trial for cassava established on-station • Materials for newly released varieties namely Nase 14, Nase 15, Nase 18 and Nase 19 were obtained from Kabarole for on-station

Commodity	Expected Annual Output	Outputs achieved for the period July 2014 to June 2015
		<p>and off-station evaluation of improved and local cassava varieties. Adaptive evaluation trials planted in Nebbi, Moyo, Maracha and Zombo districts.</p> <ul style="list-style-type: none"> Collected data on growth parameters from the on-station cassava evaluation trials Collected data on growth parameters from cassava adaptive trials in Nebbi, Moyo, Maracha and Zombo districts,
Rice	<ul style="list-style-type: none"> Four rice varieties (NAMCHE1-NAMCHE4) evaluated and promoted to farmers Farm rice trials established in SWAEZ for recently released varieties for season two. 	<ul style="list-style-type: none"> Appropriate rice tillage implements for small to medium scale farmers developed and tested: Animal-drawn multi-crop planter; Power tiller 4 row Planter; 4-row seeder; inter-row animal drawn weeder; 2-row weeder, and light weight mobile engine powered rice thresher 40 accessions of cultivated rice under phenotypic characterized at NaCRRRI; 86 accessions of wild rice seed multiplied Planted 3 sets of promising rice lines and NILs in disease hotspots Four rice varieties (NAMCHE 1,2,3,4) evaluated and promoted to farmers Established on farm rice trials in SWAEZ for recently released varieties for season two. NAMCHE4 germinated early (10 DAP). All NAMCHE varieties have higher growth vigour than NERICAs in the zone
Beans	<ul style="list-style-type: none"> Community seed bank established at Nakaseke for capacity building of farmers 	<ul style="list-style-type: none"> Released 11 new varieties; Bush type (7) and Climbers (4) Bush type: NABE 17, 18, 19, 20, 21, 22 and 23. Yield potential of 2.5

Commodity	Expected Annual Output	Outputs achieved for the period July 2014 to June 2015
	<p>and local seed inspectors in quality seed production and distribution.</p> <ul style="list-style-type: none"> • Establish on-station and on-farm performance trials of 9 new bean varieties in at least 5 districts of Northern Uganda • At least 500 germplasm lines maintained • Determine the distribution and incidence of major pests in at least 5 districts • At least 50 local and improved bean varieties evaluated • 1 drought and rust resistant bean nurseries established on station • Resistance cultivars identified • Evaluation trials for different released bean varieties on station at ABIZARDI established • Genotypes from Brazil screened under controlled conditions at Abi ZARDI • Status of striga weed in the Zone determined for selected 6 districts. 	<p>tons/ha; early maturing 60-65 days;</p> <ul style="list-style-type: none"> • Climbing varieties: 26C, 27C, 28C and 29C. Yield potential of 3.5 - 4 tons Ha-1; good market attributes of colour and size; and reduced cooking time • Established a community seed bank at Nakaseke; • Multiplied over 30 varieties of common bean be exchanged through the community seed bank; • A total of 36 farmers (18 women and 18 men) to train others as local seed inspectors empowered • Maintenance field for 250 accessions harvested and seeds stored • Maintenance trials for 250 germplasm accessions established • On-station and on-farm Performance trials of 9 new bean varieties established in Apac, Lira, Kitgum, Pader and Gulu. • 7 different fertilizer application rates under 50x10cm and 50x20cm spacing's for NABE15 have been set up in the humid tropical rain forest and mid-altitude woodland Savana areas of LACZ. • Conduct the analysis of samples collected to understand the nature and biology of AFRGM; • A total of 2420kg of nutri-bean seed harvested; • Pest surveillance was conducted in 5 districts collected for determination of the distribution and incidence of major bean pests; • Chemical analysis of the Beauregard x New Kawogo mapping population completed. • 4 data sets generated on incidence of early and late stage pests of

Commodity	Expected Annual Output	Outputs achieved for the period July 2014 to June 2015
		<p>beans was conducted in 5 districts – Manafa, Mbale, Mukono, sironko</p> <ul style="list-style-type: none"> • 65 local and improved bean varieties evaluated both in the screen house and open fields, on-station • Drought and rust resistant bean nurseries established at Namulonge • 415 bean genotypes undergoing screening to identify resistance cultivars. • Application for DUS tests was made to MAAIF, 10 nutri bean lines were submitted for this purpose. • Establishment of 42 PVS in the districts of Kabale & Kisoro for climbers, Gulu, Arua, Lira, Kamuli, Masaka, Hoima, and Mubende for bush was done. • Different released bean varieties planted on station at ABIZARDI for performance evaluation • Eleven genotypes from Brazil were screened under controlled conditions at Abi • Mbazardi has initiated designing of IPM for the two pests • The Current status of striga weed in the Zone determined. The status to be established in other sub counties • Research interventions for management of the devastating weed designed
Groundnuts	<ul style="list-style-type: none"> • Integrated control methods for Groundnuts leaf miner developed. • Adaptability trials for groundnuts varieties 	<ul style="list-style-type: none"> • Groundnuts leaf miner trial were established on-station to validate integrated control methods • Ground nuts (SERENUT 8, 10 and 14) have been established in the

Commodity	Expected Annual Output	Outputs achieved for the period July 2014 to June 2015
	(SERENUT 8, and 14) established in LACZ	Humid tropical rain forest and mid-altitude woodland Savannah areas of LACZ
Citrus	<ul style="list-style-type: none"> • Evaluation of soil fertility amendments for productivity of mangoes • Information on current status of fruit trees determined. 	<ul style="list-style-type: none"> • Fertilizers rates of 292:146:440 grams of N:P:K /tree selected as best rate for 3 mango varieties • Baseline survey to provide benchmark information on current status of fruit trees conducted in 3 districts (Kibaale, Masindi and Kiryandongo) Data entry close to completion.
Potatoes	<ul style="list-style-type: none"> • At least 6 potato genotypes planted in 6 sites (Kachwekano, Kalengyere, Rwebitaba, Buginyanya, Zebu and Kibimbiri for yield performance and late blight assessment. • 1 acre of potato evaluation trial established 	<ul style="list-style-type: none"> • 26 local FI potato clones with resistance to late blight selected ; have been planted and germinated • Produced 64 tons of foundation seed for basic seed production • Identified potato varieties Kinigi and Rwangume for chip and crisp value chain development respectively • 6 potato genotypes planted in 6 sites (Kachwekano, Kalengyere, Rwebitaba, Buginyanya, Zebu and Kibimbiri for yield performance and late blight assessment. • Input costs of generating quality seed at different levels ascertained; as a step to establishing Returns to investment in seed potato production being established. • Established 1.5 acres potato evaluation trial (Rutuku, Victoria and Rwangume. • Generated F1 seedlings from 4 clones, Data has been compiled for release of 4 varieties at the next variety release committee sitting
Apples	<ul style="list-style-type: none"> • Apple trials on flowering and fruiting patterns in West-Nile established and 	<ul style="list-style-type: none"> • Established and maintained apple trials, collected data on flowering and fruiting patterns in West-Nile

Commodity	Expected Annual Output	Outputs achieved for the period July 2014 to June 2015
Sorghum	<p>maintained</p> <ul style="list-style-type: none"> • At least five demos established in Nebbi, Yumbe and Adjumani with sorghum varieties GA06/8, GA 09/25 and GA06/ 33 • Evaluation trial established in 3 locations (Arua, Zombo and Adjumani) consisting of 27 elite sorghum lines • Evaluation trial consisting of West-Nile sorghum land races established and maintained on station • Analysis for crude fibre, ash, nitrogen, fats and micro elements done at Makerere University • An on-station trial with sorghum landrace varieties was harvested, evaluated, and data collected. • A trial to evaluate the 14 new breeding lines established on station • Highland sorghum varieties introduced in West Nile from KAZARDI 	<ul style="list-style-type: none"> • Three demos were established in Nebbi, Yumbe and Adjumani with sorghum varieties GA06/8, GA 09/25 and GA06/ 33 • An evaluation trial was established in 3 locations (Arua, Zombo and Adjumani) consisting of 27 elite sorghum lines • An evaluation trial consisting of West-Nile sorghum land races has been established and is undergoing maintenance on station • Three elite sorghum lines gave soluble sugar content above 8 meaning that they are good sorghum elite lines for forage. • Fourteen sorghum samples submitted to Makerere for detailed proximate analysis for crude fibre, ash, nitrogen, fats and microelements. • Partial field results from multi-location trials indicated that five lines gave biomass yield above (20,400kg/ha). • Partial results from participatory variety • An on-station trial with sorghum landrace varieties was harvested and evaluated • Data collection was done on yield and growth parameters for an on-station performance evaluation of improved sorghum varieties • A trial to evaluate the 14 new breeding lines established on station • Fourteen (14) sorghum lines were planted in four locations. Data collected on plant heights, flowering dates and samples collected for sugar content analysis. • Highland sorghum varieties introduced in West Nile from KAZARDI

Commodity	Expected Annual Output	Outputs achieved for the period July 2014 to June 2015
Sesame	<ul style="list-style-type: none"> Promising sesame lines evaluated on station 	<ul style="list-style-type: none"> Second multi-locational trials established in Zombo at Zeu DFI, Arua and Adjumani to represent high, mid and low altitude.
Vegetables (Tomatoes, nakati, etc.)	<ul style="list-style-type: none"> Two trials established on-station for evaluation of productivity of tomatoes 	<ul style="list-style-type: none"> 1 acre of 10 promising sesame lines evaluated on station at NASARRI 1 ton of improved sesame varieties produced Two trials established; on-station and on farm. One on evaluating the potential of compost manure on enhanced productivity of tomatoes and <i>nakati</i> in food towers. The 2nd trial on establishing the most appropriate small gardening technology (SGT) for enhanced productivity and profitability Shelf life of ginger beverage evaluated F3 tomato evaluation trials have been established & evaluation is on-going
Forestry	<ul style="list-style-type: none"> Propagation protocols developed and published for <i>Warburgia ugandensis</i> and <i>Melia volkensii</i> At least 60 Shea saplings excavated for on-station hardening towards development of fast maturing Shea Establish at least 5 acres of land on-station for woodlot and plantation tree species trials Inventory of Shea nut tree in Arua and Nebbi districts established Winner stocks for shea nut tree grafting 	<ul style="list-style-type: none"> Propagation protocols developed and published for <i>Warburgia ugandensis</i> and <i>Melia volkensii</i> 2 experimental sites (Soroti and Mukono) and 1,000 plants per site identified and marked; 60 Shea saplings excavated for on-station hardening towards development of fast maturing Shea 5 acres of land prepared for on-station woodlot and plantation tree species trials Carried out an inventory of Shea nut tree in Arua and Nebbi districts Winner stocks for Shea nut tree grafting experiment identified Shea inventory carried in one district Tree biomass data collected from 98 plots in Pinus caribaea

Commodity	Expected Annual Output	Outputs achieved for the period July 2014 to June 2015
	<p>experiment identified</p> <ul style="list-style-type: none"> • Tree biomass data collected from at least 100 plots in <i>Pinus caribaea</i> woodlots. • A draft document on management control options of common fruit pests and diseases generated • Carbon stocks in <i>E. grandis</i>, <i>P. caribaea</i>, and <i>G. robusta</i> woodlots determined. • Profitability of carbon offsets in the 3 types of woodlots - <i>E. grandis</i>, <i>P. caribaea</i>, and <i>G. robusta</i> woodlots determined • At least 3 sites evaluated as prospective hosts for on-station feeding trials i.e. Nakyesesa, Kabanyolo and Ikulwe. • At least 1 site (Nakyesesa) selected due to availability of trial cows, space for establishing the experiment and proximity to NaLIRRI laboratory facilities. • Different forage species as feed for smallholder dairy systems determined. • Oil quantity and quality for biodiesel production from <i>Jatropha curcas</i> determined. 	<p>woodlots.</p> <ul style="list-style-type: none"> • Carbon stocks in <i>E. grandis</i>, <i>P. caribaea</i>, and <i>G. robusta</i> woodlot • A draft document on management control options of common fruit pests and diseases generated • Carbon stocks in <i>E. grandis</i>, <i>P. caribaea</i>, and <i>G. robusta</i> woodlots determined. • Established 1 PSP of <i>M. volkensis</i> at Kifu for monitoring growth performance. • 3000 seedlings each of <i>M. volkensis</i> and <i>T. ivorensis</i> raised on-station for establishment of 2 trials at Kifu • Profitability of carbon offsets in the 3 types of woodlots - <i>E. grandis</i>, <i>P. caribaea</i>, and <i>G. robusta</i> woodlots determined • Compiled protocol on rearing <i>S.neseri</i> • Observed <i>Chelemones aurora</i>, <i>C.propingua</i> and <i>Crysopacarne</i> to be major natural enemies of <i>C.cronortii</i> • Established adult and larval stages of <i>Exhocomus</i> spp and <i>C.carnea</i>.to be predatory stages of <i>C.cronortii</i> • Adults of <i>Exhocomus</i> spp consumption rate was 5 <i>C.cronortii</i> aphids/day while 4th instar larva was 14 <i>C.cronortii</i> aphids/day • 3 sites evaluated as prospective hosts for on-station feeding trials i.e. Nakyesesa, Kabanyolo and Ikulwe. • 1 site (Nakyesesa) selected due to availability of trial cows, space for establishing the experiment and proximity to NaLIRRI laboratory facilities.

Commodity	Expected Annual Output	Outputs achieved for the period July 2014 to June 2015
		<ul style="list-style-type: none"> • Different forage species as feed for smallholder dairy systems determined. • Oil quantity and quality for biodiesel production from <i>Jatropha curcas</i> was <i>determined</i>.
Apiculture	<ul style="list-style-type: none"> • Colonization rates of 3 bee hive types, pests and predators established • Pollen and nectar plants done identified in Tororo, Lira and Nakasongola districts. • Honey bee colonies resistant to pests and diseases identified. • HB colonies monitored for infestation levels and varroa resistance. 	<ul style="list-style-type: none"> • Continuous data on colonization rates of 3 bee hive types, pests and predators • Acquired 4 Langstroth, 4 Kenya Topbar Beehive and 4 Weaved beehives • 2nd field survey done for identification of pollen and nectar plants done in Tororo District and 3rd field survey done in Lira and Nakasongola • 20 adult bee samples collected from productive colonies infested with Varroa in a study to identify honey bee colonies resistant to pests and diseases • HB colonies monitored for infestation levels and varroa resistance. • Forage trees transplanted for apiculture research including; 2500 Eucariptus, 900 Lemon, 150 Bottle brass seedlings • 1200 citrus seedlings were root pruned for apiculture research • 1200 citrus seedlings were grafted and budded for apiculture research
Socioeconomic	<ul style="list-style-type: none"> • Study on socioeconomic and livelihood analysis of Maracha and Yumbe districts conducted. • Socio-economic status of peri-urban fish 	<ul style="list-style-type: none"> • Collected data on socioeconomic and livelihood analysis from 120 households in Maracha and Yumbe districts. • 20 fish farmers in Gulu, Pader and Kitgum districts trained. • Data collected on socio-economic status of peri-urban fish farming in

Commodity	Expected Annual Output	Outputs achieved for the period July 2014 to June 2015
	farming in the districts of Kampala, Wakiso and Mukono conducted.	the districts of Kampala, Wakiso and Mukono; data analysis is on-going
Goat	<ul style="list-style-type: none"> • Possible sources of elite parental lines of goat cross breeds for early maturity and weight identified • Legume feeds for improved performance of goats under intensive systems determined. 	<ul style="list-style-type: none"> • Identified possible sources for elite parental lines of goat cross breeds for early maturity and weight • 120 goats maintained on-station as breeding stock at KAZARDI • Land (1/4 acre) prepared in each of 4 on farm sites. Seedling production has been initiated on station for forage species for goats. • Legume based feeds prepared for nutrient profiling for improved performance of goats under intensive systems

Other on-going research interventions are in non-priority crops (e.g. wheat), soils, food biosciences, plant genetic resources management, agricultural engineering and climate change adaptation.

Under the Competitive Grant Scheme (CGS), 41 proposals were approved for implementation and are currently being funded. These are indicated here below:

Table 55: Proposals for Competitive Grant Scheme (CGS)

Thematic Area	Sub-Theme	Title
Improving productivity and utilisation in the crop sub-sector	Harnessing genetic biodiversity for improving productivity and utilisation of crop resources	Domesticating and commercialising of Uganda's endangered high value medicinal plants
		Evaluation of performance and utilization properties of grain amaranth varieties.
		Intervention to address the leaf and fruit spot diseases and fruit fly biotic stresses in Uganda.
		Conservation and evaluation of indigenous tomato accessions for improved productivity and nutrition.
		Establishment of a sustainable farmer managed pure seed production and delivery system in Teso-Karamoja sub region, Uganda.
		Using indigenous knowledge to promote cowpea production and utilisation in Uganda
		Developing strategies to utilize wild edible saprophytic mushrooms for food security and climate variability adaptation among households in Uganda.
	Tissue Culture Innovations with Application in the Production of Quality Banana, Apple and Coffee (BAC) Planting Materials	
	Improved management of plant pests, diseases and noxious weeds of economic importance	Diversity and management of heart rot disease of pineapple in Uganda.

Thematic Area	Sub-Theme	Title
	Improving management of soil fertility and plant nutrition	Determining the effectiveness of soil amendment options and Imazapyr application towards maize productivity enhancement in Striga infested districts in Eastern Uganda
		Unlocking offseason mango production potential for improved nutrition and income
Enhancing productivity of livestock	Improved control strategies for major livestock diseases and pests	Potential role of Diatomaceous earth on chicken productivity in Uganda
		Validations of recombinant tick gut proteins(Ra86 and Bm86) for improved tick control in Uganda
		Development of Strategies to control zoonotic Brucellosis in cattle corridor
		Enhancing cattle productivity through control of ticks by evaluation of anti-tick vaccine on selected farms in Uganda
	Technologies and Innovations for enhanced management of livestock feeds and feed management systems	Improvement of pig productivity through diversification of piglet nutrition options and upscaling of pig artificial insemination in Uganda
		Development of a biological mycotoxin-binder for improving the safety of the livestock feeds and animal productivity
	Technologies and Innovations for enhanced commercial production and productivity of beneficial insect value chain	Developing Innovative Tools and Technologies for Increased Beekeeping Productivity in Uganda
	Enhancing livestock products value addition, quality assurance and	Evaluating the potential of Ugandan bentonite in alleviating aflatoxicosis - induced decline in animal production

Thematic Area	Sub-Theme	Title
	traceability	Improving local pig breeds in Uganda through the development of marker-assisted selection strategies
	Harnessing technologies for genetic conservation and improvement of indigenous livestock breeds	Identification, selection and breeding of high producing indigenous chicken
		Climate change resilient breeding strategies for indigenous goat breeds in Uganda
		Improving production and conservation of the Ugandan domestic goat: control of diseases and optimizing present and future breeding options using a landscape genomics approach (GOATGEN)
Enhancing sustainable management for environment, natural resources and climatic adaptation for improved agricultural productivity	Technologies and innovations for enhanced climate change resilience under rain-fed agriculture and livestock systems	Enhancing the productivity of Uganda's dry lands for climate change adaptation and mitigation using hydrogel technology
	Technologies and innovations for enhanced use and industrial application of natural products bio-diversity and germplasm	Exploring potential of aquatic algae for bio-diesel production in Uganda
	Technologies and innovations for enhanced farm, household and urban waste use	Broadening the utilization base for waste use in the provision of briquette fuel for environmental services and income to farming households
	Microbial bio-diversity management and utilisation	Evaluating micro bioremediation of aquaculture waste water in Uganda
	Land use, cropping and their impact on agricultural productivity	Improving smallholder farmer's crop productivity through use of selected cover crops and trees in North Eastern

Thematic Area	Sub-Theme	Title
		Uganda
Improving natural fish stock management and commercialization of aquaculture	Enhanced participation and involvement of users in fisheries resources management	Enhancement of fisheries production through improvement of Light attraction technology
	Development of technologies and innovations for enhanced fish productivity in natural fisheries ecosystems	Small water bodies in Uganda: An unrealized potential for boosting fish production
	Transformation and commercialisation of aquaculture production systems	Developing probiotic technology to control fish mortalities for increased commercial fish farming in Uganda
		Ecological adaption of <i>Atlestes baremoze</i> "angara" fish under captive conditions
		Development of aquaculture technologies for increased productivity and re-commercialization of Singidia Tilapia(<i>Oreochromis esculentus</i>): the native and previous commercial species of Lake Victoria
	Enhanced production and management of fish feeds and feed utilisation regimes	Development of feeding attractants for fish feeds and evaluation of efficient water use systems in tank aquaculture
	Improved farmer fish seed quality through fish breeding and brood stock management	Domestication and breeding of the Nile perch for increased fish production
		Advancing aquaculture hatchery productivity through mass production and packaging of locally grown fish larval foods: Rotifers, Copepods and Artemia
Enhanced culture, harvesting of fish of	Evaluating performance of Chinese carp poly-culture in Uganda	

Thematic Area	Sub-Theme	Title
	economic, processing and marketing of fish of economic importance	Development and promotion of post-harvest technologies for improved utilization of small pelagic fish species
	Models for People Private Partnerships and engagement	Developing innovative and appropriate models for people private public partnerships and engagements in sorghum, sunflower and poultry value chains in Uganda
	Agricultural research Business Entrepreneurship	Enhance adoption and productivity of commercial Agriculture within the Lake Victoria Basin through Agro–Enterprise–Mix
	Socio-economic and impact studies	Policy implication for agro-enterprise development initiatives and strategies for gender economic empowerment

Table 56: Research-Extension and Farmer Interface

Commodity	Expected annual output	Outputs achieved for the period July 2014 to June 2015
Maize	<ul style="list-style-type: none"> At least 500 kg of breeder, foundation seed for Longe 5, Longe 4 Produced and distributed at Ngetta ZARDI Use of super bag for maize storage to at least 5 field school groups in Pader and Gulu Demonstrated At least 3 acres of Maize planted for commercial production on top of the 10 acres planted earlier at Kamenyamiggo station. 	<ul style="list-style-type: none"> Produced and distributed 600 kg of breeder, foundation seed for Longe 5, Longe 4 Demonstrated use of super bag for maize storage to 2 field school groups in Pader and Gulu Planted 3 acres of Maize for commercial production on top of the 10 acres planted earlier at Kamenyamiggo station. Capacity of 225 farmers built in Nakaseke on maize storage Farmers identified and initiated in maize quality management ocoons in Nakaseke <i>Storability of maize</i>: Data collection

Commodity	Expected annual output	Outputs achieved for the period July 2014 to June 2015
	<ul style="list-style-type: none"> • At least 300 farmers in Nakaseke trained on maize storage • At least 15 acres of demonstration for Maize; (Longe 5, Longe 4 and) established in different locations. • 	<p>completed on cacoon stored maize. There was no infestation in ocoons after 7 months of maize storage compared to complete damage control</p> <ul style="list-style-type: none"> • 5 acres of demonstration for Maize; (Longe 5, Longe 4 and) established in different locations. • Digital weighing scale, ruler and water parameter meter acquired
Dairy	<ul style="list-style-type: none"> • Promotional materials developed and distributed. • Present at least 6 papers in NARO scientific conference • At least 5 papers presented during the Uganda Veterinary Scientific Symposium • Equipment and consumables for livestock nutrition program laboratory procured • Demonstration fields for Napier and Brachiaria seedlings demonstrated to farmers in four districts in the zone. • At least 2 acres of trials for identification of superior forage sorghum varieties established and maintained. • At least 50 demonstrations on fodder based agroforestry, forage 	<ul style="list-style-type: none"> • 4 sets of dissemination materials developed. They provide facts among cause, risk, transmission and control of E. coli, bovine TB, Brucellosis and Mastitis • 6 papers presented during the NARO scientific conference • 3 papers presented during the Uganda Veterinary Scientific symposium • Procured facilities for livestock nutrition program laboratory; oven, incubator and reagent • Awarded tender for supply of equipment for livestock research laboratory for milk borne zoonosis • Napier and Brachiaria seedlings demonstrated to farmers. A lot of pasture seed has been produced waiting for delivery to the farmers. • Established 2.5 acres of trials for identification of superior forage sorghum varieties, soil and sorghum biomass samples were taken • 25 demonstrations on fodder based agroforestry, forage conservation and forage legume-cereal integration respectively established in Nakaseke, Nakasongola, Luwero, Kiboga, Sembabule and Mubende

Commodity	Expected annual output	Outputs achieved for the period July 2014 to June 2015
	<p>conservation and forage legume-cereal integration respectively established in Nakaseke, Nakasongola, Luwero, Kiboga, Sembabule and Mubende</p> <ul style="list-style-type: none"> • Community breeding farmer groups trained in Katwaki district • At least 5 evaluation trials and 5 multiplication fields for leguminous pastures established • At least 10,000 plantlets of <i>Briacharia molato</i> distributed in Kabarole district • At least 2000kg of dry season feeding strategies for cattle including hay and molasses formulated and prepared. • Current status of parasites, vectors, diseases and indigenous management practices for guiding livestock research in LACZ established • 1 acre of <i>Briacharia molato</i> multiplication field on station maintained • At least 500 kgs of forage harvested, including lab 	<ul style="list-style-type: none"> • Molecular analysis of 150 samples of indigenous cattle done in a study to improve milk productivity of indigenous cattle through targeted selection and cross-breeding. • Conducted a laboratory analysis of feed samples for aflatoxin content – 100 feed samples were analyzed • Two Community Breeding Farmer groups (KAUSON and MAPANGA) trained and strengthened to a membership totaling 197 farmers from the sub-counties of Katakwi, Usuk, and Ongongoja (KAUSON) and also from Magoro, Palam and Ngariam (MAPANGA) • Promotions conducted on breed characteristics, selection and cross-breeding that included; Reference GPS maps, radio talk show and ATESO newspaper article and pasture multiplication and demonstration plots on 5 sub-counties of Katakwi, Usuk, Ongongoja, Palam and Ngariam planted • Maintenance of three (3) established <i>Bracharia</i> species in the evaluation trial; maintained 0.5 acres of <i>Bricharia molato</i> multiplication field; five (5) acres of leguminous pastures (<i>Mucuna</i>, <i>Lab lab</i>, <i>centrocema</i> and <i>stylothensis</i>) maintained on-station. • Distributed 13750 plantlets of <i>Briacharia molato</i> in kabarole • Developed dry season feeding strategies for cattle that included; 354 kg of mollasses formulated; 1200 kg <i>hay</i> prepared. • Maintained <i>Bricharia molato</i>

Commodity	Expected annual output	Outputs achieved for the period July 2014 to June 2015
	lab and mucuna.	<p>multiplication field on station at Rwebitaba</p> <ul style="list-style-type: none"> • Conducted a baseline survey in Kabale to establish current status of parasites, vectors, disease and indigenous management practices for guiding livestock research in LACZ • Maintained 2 acres of decapitation experiment and 5 acres of multiplication plantation at Rwebitaba station) • Maintenance of bee forage plants (Calliandra - 150, Angels trumpet - 100 and bottle brush - 100) in the apiary • Harvested 110 Kgs of Lab lab and 97 Kgs of mucuna;
Beef	<ul style="list-style-type: none"> • At least 500 farmers in Gulu and Lira trained on feeds and feed management for dry season management. 	<ul style="list-style-type: none"> • 420 farmers in Gulu (30) and Lira (90) were trained on feeds and feed management • Held a consultative meeting held with DVOs in the region held. IT expert engaged. • Technical feasibility study carried out on the establishment cattle shade and silage store. • 120 goats maintained on-station as breeding stock at KAZARDI • Maintained Bricharia molato multiplication field;
Bananas	<ul style="list-style-type: none"> • At least 25 demonstration gardens for promotion of banana varieties, M9, FHIA 17 and M2 established in 5 districts of western and central Uganda • Economic impact of BBW 	<ul style="list-style-type: none"> • Banana varieties, M9, FHIA 17 and M2 promoted through community in 5 districts of western and central Uganda • Data collection on economic impact of BBW control in SWAEZ on-going • EET of 557 new matooke hybrids established on-station. • 4000 banana suckers distributed to

Commodity	Expected annual output	Outputs achieved for the period July 2014 to June 2015
	<p>control in SWAEZ conducted</p> <ul style="list-style-type: none"> • At least 10,000 banana suckers distributed to farmers in districts of Mukono, Kayunga and Gulu. • Agricultural technologies promoted through at least 20 Schools in Kalungu District. 	<p>farmers in Mukono, Kayunga and Gulu.</p> <ul style="list-style-type: none"> • 3,405 banana suckers prepared for expansion of demonstration, gap filling in the experiments and availing to farmers of Mukono, Kayunga and Gulu districts • Planted technologies in gardens of 5 selected schools in Kalungu district • Monitored the five planted gardens in different schools, trained awarding panel and judged the schools • 3 promotional posters on M9 series banana variety sourced; 23 information brochures sourced • 6 feedback meetings and 6 bench marking workshops on BBW done, two in each districts of Kayunga, Masaka and Nakaseke
Sorghum	<ul style="list-style-type: none"> • At least 5 acres of sorghum demonstrations established in Katakwi district 	<ul style="list-style-type: none"> • Established 2 acres of sorghum (Sekedo) in Katakwi district • A total of 5500 kg of foundation of sorghum (SESO1 and 3,700 kg of cowpea (Secow-2w) were produced by farmer groups in Kapujan sub-county, Katakwi district.
Fish	<ul style="list-style-type: none"> • Importance of routine grading and supplementary feeding in catfish promoted on station and in stakeholder workshop. • Fish feed management and handling promoted on station and in stakeholder workshop to at least 200 farmers and input dealers and feed 	<ul style="list-style-type: none"> • Importance of routine grading and supplementary feeding in catfish promoted on station and in stakeholder workshop. • Fish feed management and handling promoted on station and in stakeholder workshop. • Catfish performance in crater lakes of Western Uganda promoted on station and in stakeholder workshop to 220 farmers. • One brochure on production of Catfish

Commodity	Expected annual output	Outputs achieved for the period July 2014 to June 2015
	<p>manufacturers</p> <ul style="list-style-type: none"> • Catfish performance in crater lakes of Western Uganda promoted on station and in stakeholder workshop to at least 150 farmers • One brochure on production of Catfish in crater lakes produced • Quality plant based fish feeds produced and disseminated • A total of 1000 Tilapia fries and 500 catfish fries raised under seed production for distribution to farmers. • Stocked Tilapia bred about 100,000 fingerlings for multiplication to farmers 	<p>in crater lakes developed.</p> <ul style="list-style-type: none"> • 120 brochures on production of Catfish in crater lakes produced and distributed to farmers and other stakeholders. • Quality plant based fish feeds produced and disseminated • A total of 1000 Tilapia fries and 500 catfish fries raised under seed production for distribution to farmers. • Stocked Tilapia bred about 100,000 fingerlings for multiplication to farmers
Coffee	<ul style="list-style-type: none"> • At least 1 acre of Robusta and Arabica coffee lines for demonstration maintained on station • At least 100,000 seedlings potted, 120,634 coffee seedlings/plantlets availed to farmers in Masaka , Mukono, Iganga, Mpigi, Lwengo,Sembabule and Wakiso Districts 	<ul style="list-style-type: none"> • Maintained of 1 acre of Robusta and Arabica coffee lines for demonstration • 145,000 seedlings potted, 124,634 coffee seedlings/plantlets availed to farmers in Masaka , Mukono, Iganga, Mpigi, Lwengo,Sembabule and Wakiso Districts • Maintenance of 1 acre of Robusta and Arabica coffee lines for demonstration;
Soya bean	<ul style="list-style-type: none"> • At least 1 acre of on-station demonstrations 	<ul style="list-style-type: none"> • Established 0.2 acres of on-station demonstrations for soya bean

Commodity	Expected annual output	Outputs achieved for the period July 2014 to June 2015
	for soya bean Namusoy1N, namusoy2N, Namusoy3N and maksoy4M	Namusoy1N, namusoy2N, Namusoy3N and maksoy4M
Cassava	<ul style="list-style-type: none"> • Train at least four farmer groups in Koboko and Moyo in cassava processing and value addition • Farmer groups identified in Adjumani, Nebbi and Koboko and multiplication of improved sorghum varieties initiated • Evaluation of storage and packaging options for cassava conducted • Protocols for rearing white fly parasitoids, against cassava white flies, developed • At least 1000 bags of cassava distributed in 10 sub-counties in Kanungu district • At least 2500 bags of improved cassava planting materials distributed in 12 sub-counties in Mbarara, Bushenyi districts • At least 350 acres of cassava foundation stock on station established and maintained through weeding, thinning, etc. 	<ul style="list-style-type: none"> • Farmer groups for training in cassava post-harvest and value addition identified in Koboko, Adjumani and Moyo districts • Two farmer groups in Koboko (50 farmers) and Moyo (50 farmers) trained in cassava processing and value addition • 6 farmer groups were identified in Adjumani, Nebbi and Koboko and multiplication of improved sorghum varieties initiated • <i>Evaluation of storage and packaging options for cassava</i>: Evaluated super-bag, silo and polyethylene bag on damage by storage pests. All options performed better than the control • Rearing protocols for white fly parasitoids, against cassava white flies, developed • Distributed 865 bags of cassava in 10 sub-counties in Kanungu district • Over 1864 bags of cassava planting materials distributed in 12 (Translates into 285 acres of cassava= 1,142 farmer beneficiaries) in Mbarara, Bushenyi districts • Maintained the established 207 acres of cassava foundation stock on station through weeding, thinning, etc.

Commodity	Expected annual output	Outputs achieved for the period July 2014 to June 2015
Rice	<ul style="list-style-type: none"> • At least 2,500 kg of improved NERICA 4 rice variety distributed to farmers in Rubirizi and Mitooma • At least 1 acre of demonstrations established on station for Rice (NERICA 1, NERICA 4, NERICA 10,) 	<ul style="list-style-type: none"> • 1,200 kg of improved NERICA 4 rice variety distributed to farmers in Rubirizi and Mitooma • 0.25 acres of demonstrations established on station for Rice (NERICA 1, NERICA 4, NERICA 10,)
Beans	<ul style="list-style-type: none"> • At least one map on incidence and severity of major diseases generated. • Establish at least 5 acres of foundation seed for bush beans and climbing beans • Establish at least 200 field demonstrations in different agro-ecological zones • At least 3 MT of breeder and 40 MT of foundation seed produced 	<ul style="list-style-type: none"> • Generated a map on incidence and severity of major bean diseases in Uganda • At least 7 acres of bush beans and 5 acres of climber beans were established • 240 demos established in Iganga, Kasese, Mubende, Hoima, Mityana, Kamuli, Tororo, , Lira, Oyam, Kamwenge, Rubirizi, Kamwenge, Ibanda, Luwero, Masindi districts for beans and planted; demo gardens characterize through soil analysis; • Produced and distributed 3.5 MT of breeder seed and 55 MT of foundation seed for climbing and bus beans varieties • Planted 0.5 acres NABE 15 and 0.5 acres of NABE 16 for multiplication of seed • One seed stockist was given seed of NABE 26C to sell at a reduced price; Four demonstrations were established in Hoima district, Kiziranfumbi Sub County. While in Kisoro only 2 demos were established; Field day was only conducted in Hoima

Commodity	Expected annual output	Outputs achieved for the period July 2014 to June 2015
Citrus	<ul style="list-style-type: none"> • Raise and distribute at least 100,000 seedlings of passion fruits, mangoes, oranges, lemons, avocados etc. on station • At least one practice booklet published and distributed to stakeholders • Publish study findings on regeneration and transformation of yellow passion fruit • Citrus evaluation trials for growth and yield performance established; 3 acres of mangoes established in Buliisa; 1.25 acres of oranges established in Kigumba • At least 5 acres of Mangoes, Citrus oranges maintained. 	<ul style="list-style-type: none"> • Potted the following: 1800 Passion fruits, 7500 Mangoes, 600 Avocados, 2400 Lemons • Grafted/budded the following: Mango - 900, Citrus-1350, Avocado -700, Passion fruit-500, Pawpaw -500, Guavas -100, Jackfruit -200 • Aailed the following: 447-Citrus, 160-Mango, 220- Passion, 175-Avocado, 350-Jackfriut, 47 Pawpaws • Fruit fly management practice booklet published and distributed to stakeholders • Regeneration and transformation of yellow passion fruit published in an MSc. thesis • Established citrus evaluation trials for growth and yield performance; 3 acres of mangoes established in Buliisa; 1.25 acres of oranges established in Kigumba • Maintenance of 5 acres of Mangoes, Citrus oranges and 3
Potatoes	<ul style="list-style-type: none"> • 21 tonnes of seed potato harvested and distributed for uptake path ways and planted 1 ha of pre-basic seed • At least 200 farmers from the four districts of the SWHAEZ trained in disease control, housing, nutrition, record keeping and breeding. • At least 200 farmers trained in nursery management of tissue 	<ul style="list-style-type: none"> • Harvested and distributed 21 tonnes of seed potato for uptake path ways and planted 1 ha of pre-basic seed • 154 farmers (96 Males and 58 Females) from the four districts of the SWHAEZ trained in disease control, housing, nutrition, record keeping and breeding. • 80 farmers trained in nursery management of tissue culture plantlets and general agronomic practices of potato • Produced 23,654 plantlets and 42,067 minitubers of quality declared potato varieties for enhanced potato

Commodity	Expected annual output	Outputs achieved for the period July 2014 to June 2015
	<p>culture plantlets and general agronomic practices of potato</p> <ul style="list-style-type: none"> • At least 50,000 plantlets and 100,000 minitubers of quality declared potato varieties for enhanced potato productivity in Uganda produced on station • At least 50 tons of basic seed of quality declared potato varieties for enhanced potato productivity in Uganda • on-farm evaluation trials for 4 potato varieties with 6 Host farmers established in Kyenjojo, Kyegegwa and Kabarole districts 	<p>productivity in Uganda</p> <ul style="list-style-type: none"> • produced 30 tons of basic seed of quality declared potato varieties for enhanced potato productivity in Uganda • Established on-farm evaluation trials for 4 potato varieties with 6 Host farmers in Kyenjojo, Kyegegwa and Kabarole districts
Apples	<ul style="list-style-type: none"> • At least 120 farmers selected in Rukungiri, Kanungu, Kisoro , Mbarara and Kabale for promotion of quality declared apple varieties for enhanced productivity in Uganda • One on-station trial, CFT 1/2014 for selected clones established; Apples on-station evaluation trials established; • Apple mother gardens maintained; 	<ul style="list-style-type: none"> • Farmers selected in Rukungiri, (2), Kanungu (5), Kisoro (5), Mbarara (5) and Kabale (10) for promotion of quality declared apple varieties for enhanced productivity in Uganda • One on-station trial, CFT 1/2014 for selected clones established; Apples on-station evaluation trials; • Maintenance of Apple mother garden; • Maintained one acre of on-station evaluation trial for 13 apple varieties

Commodity	Expected annual output	Outputs achieved for the period July 2014 to June 2015
Sweet potatoes	<ul style="list-style-type: none"> • At least 1 acre of sweet potato planted to multiply planting materials of the following varieties; NASPOT 1, 8, 10 12 and 13 	<ul style="list-style-type: none"> • 1 acre of sweet potato planted to multiply planting materials of the following varieties; NASPOT 1, 8, 10 12 and 13
Forestry	<ul style="list-style-type: none"> • At least 10 ha of fodder seed stands established. • Farmers' tree management practices determined • At least 250 shea tree wildlings grafted in Lango farming system • Survival performance of grafted shea trees established at 20% • At least 200 cuttings of <i>Carissa edulis</i> propagated in experimental randomized complete block design • At least 25 farmers in Tororo equipped with knowledge on options of tree management under integration with crops • At least 50,000 horticultural plants produced and distributed. • Assorted tree seed collected and processed in the seed technology laboratory • At least 500 trees selected to provide rootstocks for grafting of shea butter tree • At least 500 cuttings of 	<ul style="list-style-type: none"> • 5 ha of fodder seed stands established • To ensure utilization of Indigenous Tree Species for enhanced land productivity and improved crop yield determined. • Farmers' tree management practices (of staking) under maize-<i>Markhamia lutea</i> tree integration on farms determined. • 120 shea tree wildlings grafted in Lango farming system (Alebtong district) • Survival performance of grafted shea trees established at 20% • 204 cuttings of <i>Carissa edulis</i> propagated in experimental randomized complete block design • 7 on-station demo plots managed and maintained • 12 farmers in Tororo equipped with knowledge on options of tree management under integration with crops • improved distribution and access of agroforestry tree germplasm of these trees; <i>Maesopsis eminij</i>, <i>Podocarpus usambarensis</i>; <i>Cordia Africana</i> and <i>Albizia coriaria</i> • 16.414 horticultural plants produced and distributed. • Assorted tree seed collected and processed in the seed technology laboratory • Oriented 4 staff into their roles and office responsibilities

Commodity	Expected annual output	Outputs achieved for the period July 2014 to June 2015
	<p>Xanthoxylum chalybeum obtained from Budongo Forest Reserve and propagated under non-misting conditions at Kifu</p> <ul style="list-style-type: none"> • 300 plantlets of <i>Warbugia ugandensis</i> raised at Kifu • One on-farm tree-crop experimental protocol developed. • At least 10 cashew nurseries established in 4 districts in the zone. • At least 1 book on Tree Seed Handling, Nursery and Tree Management published • Information on infestation levels generated on the Biological control of <i>Leptocybeinvasa</i> attacking eucalypts and evaluation and implementation of management options against <i>Cinaracronortii</i> a pest of Pines. • At least 100,000 plantlets raised in the tree biotechnology unit. • 1 poster on performance of improved cooking stoves developed: • cashew demo plots established in Omodoi (20ha) and Abongomola (1 ha) • 8 sites for forage seed stand development identified, geo-referenced and assessed 	<ul style="list-style-type: none"> • 200 different shea tree grafts developed. • 339 trees selected to provide rootstocks for grafting on 14.5 acres of land in Alebtong district, Lango farming system to ensure Suitable propagation methods of shea butter tree • 650 cuttings of <i>Xanthoxylum chalybeum</i> obtained from Budongo Forest Reserve and propagated under non-misting conditions at Kifu • 300 plantlets of <i>Warbugia ugandensis</i> raised at Kifu • One on-farm tree-crop experimental protocol developed. • 5 cashew nurseries established; 2 in Katakwi (Omodoi & Moru-Abella), 1 in Ngora (Kaler), 2 in Lira (Ojwina and Railway quarters) • 1 (one) book on Tree Seed Handling, Nursery and Tree Management published for Domestication and Propagation of priority plant species for improved health, nutrition and incomes • 30 kg of mango seeds acquired and germinated. • 2 experimental sites (Soroti and Mukono) and 1,000 plants per site identified and marked; • Information on infestation levels generated on the Biological control of <i>Leptocybeinvasa</i> attacking eucalypts and evaluation and implementation of management options against <i>Cinaracronortii</i> a pest of Pines. • 47,392 assorted plants • 27,497 clone eucalypt plantlets developed • 2 cashew demo plots established in Omodoi (20ha) and Abongomola (1 ha) • 8 sites for forage seed stand development identified, geo-

Commodity	Expected annual output	Outputs achieved for the period July 2014 to June 2015
	<p>in Eastern highlands AEZ.</p> <ul style="list-style-type: none"> • 15 trial host farmers in Tororo trained on-spot on below ground tree management practices • 10 candidate forage species earmarked. • Trained 17 students from Kyambogo on sawmilling. 	<p>referenced and assessed in Eastern highlands AEZ.</p> <ul style="list-style-type: none"> • 15 trial host farmers in Tororo trained on-spot on below ground tree management practices • Manuscript on farmers' forage options submitted to Agroforestry Systems Journal. • Trained 17 students from Kyambogo on sawmilling.
Apiary	<ul style="list-style-type: none"> • Promote apiculture technologies • 2 nucs and 2 hives were established for colonization in apiculture research • 2 acre-apiary units maintained • Re-baited and deployed KTB, Langstroth and log traditional hives. • At least 2 bee forage species established. • Incidence, severity and farmers' cropping mechanisms against major bee pests and diseases in Buliisa and Kiryandongo assessed. • At least 5 catcher boxes for Langstroth bee hives acquired 	<ul style="list-style-type: none"> • Apiculture technologies were exhibited at King George Stadium in Tororo, Parliamentary Gardens and during World Food Day at Namulonge • 2 nucs and 2 hives were established for colonization in apiculture research • Maintained 2 acre-apiary unit (bush clearing, opening of fire brakes and removing trash) • Re-baited and deployed 5/10 KTB, 7/10 Langstroth and 4/10 log traditional hives. (5/10 KTB, 3/10 Langstroth, and 6/10 log traditional bee hives have so far been colonized. • Maintained 2 bee forage species (1.5acres of Calliandra calothyrsus and 0.25 acres of Ocimum (Mujaja) as part of management of a bee forage garden • Survey done to assess the incidence, severity and farmers' coping mechanisms against major bee pests and diseases in Buliisa and Kiryandongo • Acquired 5 catcher boxes for Langstroth bee hives; Procured one fish harvesting gear (net);
Outreach, Awareness	<ul style="list-style-type: none"> • At least 1500 people in Lango and Acholi sub-regions sensitized on 	<ul style="list-style-type: none"> • 897 students and 14 farmers have been sensitized on improved varieties and associated technologies.

Commodity	Expected annual output	Outputs achieved for the period July 2014 to June 2015
<p>and sensitizations</p>	<p>improved varieties and associated technologies.</p> <ul style="list-style-type: none"> • At least 500 farmers in LACZ sensitized on various technologies available at BUZARDI. • At least 5 trainings conducted with incubates on topical issues. • Three training workshops conducted and a total of 200 farmers trained on seed production with emphasis on gender. • At least ten farmer groups trained on health, nutrition and management in Moyo, Arua, Nebbi and Yumbe districts • At least two multi-stakeholders workshop conducted in Katakwi district • At least 200 farmers trained on striga management options in Katakwi and Serere districts • At least five community seed production associations established • At least 10 field days conducted in 8 districts [Hoima, Iganga, Kamuli, Tororo, Lira, Mityana & Mubende] districts 	<ul style="list-style-type: none"> • 320 farmers have been sensitised on various technologies available at BuZARDI in a two separate shows organised by Agric pro focus and the Bunyoro kitara Tourism in Hoima. • Conducted 2 trainings with incubatees: one with offsite incubatees and the other on branding and marketing with onsite incubates. • Three training workshops conducted and a total of 200 farmers trained on seed production with emphasis on gender. • Four farmer groups trained on health, nutrition and management in Moyo, Arua, Nebbi and Yumbe districts • Two multi-stakeholders workshop were conducted in Katakwi district • 50 farmers were trained on striga management options • Three Community seed production associations established i.e. KIKOTA farmers association multiplied SESO 1(drought and Striga tolerant) improved variety on 30 acres of land. • OKULONYO farmer group produced 3600kgms of SESO1. • Field days conducted in [Hoima, Iganga, Kamuli, Tororo, Lira, Mityana & Mubende] districts • Bugondo farmer group produced 20,000kgms and supplied to Grow More Seeds Seed Company. • 15 farmer groups, 10 seed companies 17 Field extension and 6 NGOs are involved in quality seed production of striga and drought tolerant varieties

Commodity	Expected annual output	Outputs achieved for the period July 2014 to June 2015
	<ul style="list-style-type: none"> • At least 20 farmer groups and seed companies selected for quality seed production of striga and drought tolerant varieties SESO 1, SESO3 and SECOW 2 • Farmer preferred integrated striga and drought management technologies promoted among the 20 farming communities in Teso and Karamoja farming systems in collaboration with NaBUZARDI and KALIP • At least ten Community seed production associations were linked to New NAADS(UPDF) • At least 200 Kg of foundation seeds from previous supplementary fund was produced • Green gram, black gram, groundnuts, soybean, Mucuna good for rotation with Finger millet. • Awareness created among other farmers in four districts of Mbale, Nebbi, Kapchorwa, and Kabarole about the ram pump • 10 artisans trained on 	<p>SESO 1, SESO3 and SECOW 2</p> <ul style="list-style-type: none"> • Promoted farmer preferred integrated striga and drought management technologies among the 20 farming communities in Teso and Karamoja farming systems in collaboration with NaBUZARDI and KALIP • Five Community seed production associations were linked to New NAADS (UPDF) and to four seed companies 50,000kgms of SESO1, 80,000kgms of SESO3 & 10,000kgm SECOW2 supplied to seed companies. • 200 Kg of foundation seeds from previous supplementary fund was produced • Green gram, black gram, groundnuts, soybean, Mucuna good for rotation with Finger millet. • Awareness created among other farmers in four districts of Mbale, Nebbi, Kapchorwa, and Kabarole about the ram pump • 10 artisans trained on fabrication of ram pumps • 2 persons (1 farmer and his operator) trained in operation of power tiller • 15 matooke hybrids multiplied (120 plants each) for establishing PYT on-station. • Conducted 2 trainings with incubatees: one with offsite incubatees and the other on branding and marketing with onsite incubatees

Commodity	Expected annual output	Outputs achieved for the period July 2014 to June 2015
	fabrication of ram pumps <ul style="list-style-type: none"> • 15 matooke hybrids multiplied (120 plants each) for establishing PYT on-station. • At least 2 trainings conducted on station with incubatees: one with offsite incubatees and the other on branding and marketing with onsite incubatees 	

- i) NARO institutes continue to produce breeder seed to strengthen seed multiplication by farmers and seed companies.
- ii) Under the East African Agricultural Productivity Project (EAAPP), the zonal institutes empowered farmers in the production of cassava planting material.
- iii) Under The Next Generation Cassava Project, the Uganda Biosciences Information Center (UBIC) was established upon the recognition of the need for agricultural scientists to communicate the social significance of their work to policy-makers and various other stakeholders including the general public. UBIc's current focus has been biotechnology and biosafety education. Working in partnerships with other local and international biotech initiatives, UBIc has:
 - a. Developed a number of biotechnology research and regulation information materials including posters, pocket-Ks, videos and leaflets.
 - b. Organized community sensitization workshops in all the regions country-wide, exhibitions and seeing is believing tours for policy-makers, journalists, farmers, religious, youth, women and cultural leaders, and area local government officials.
 - c. UBIc has also engaged wider community audiences through increased use of audio, visual, print and social media platforms including a website (www.ugandabic.org/n).
 - d. Worked towards integration of modern agricultural biosciences training in formal education programs by engaging educators and students. Various engagement approached have been used including a National Annual Biotech Essay Writing Contest, Schools' Biotech Master Classes, school visits and supply of information materials.

b) Institutional Capacity Strengthening

i. Human Resource

Table 57: Staffing Level of NARO as at May 2015

Staff	Approved Establishment (2013/14)	Posts currently filled (May 2015)	Gap
Total	949	842	107

Table 58: Staff Training in NARO: Targets and Achievements

Activity	ATAAS Target	ATAAS Achieved	EAAPP Target	EAAPP Achieved
Training (long term)	PhD 30	32 (o/w ⁸ 1 complete)	11	12
	MSc 15	7 (o/w 2 complete)	11	9 (o/w 2 complete)

ii. Infrastructural Development

Under ATAAS, whose Medium Term Review (MTR) has just been completed, the following works are ongoing.

Table 59: Infrastructure Works and Location

Civil Works	Location
New office building with conference facility of approx. 350 sq. m; Rehabilitation of the office building at Buginyanya into a laboratory	Buginyanya (BugiZARDI) Station
New office building with conference facility of approx. 350 sq. m;	Bulegeni Site
New Administration Building with conference facilities of approx. 350 sq. m; New Director's house; Laboratory of 200 sq. m; Store of approx. 80 sq. m;	Nabuin (NabuZARDI) Station

⁸ Of which

Civil Works	Location
New office building with conference facility of approx. 350 sq. m; Laboratory building of 200 sq. m	Ngetta (NgeZARDI) Station
Rehabilitation of the 3 No. Laboratory blocks (including the cold room) for Sorghum, Soil Chemistry and Entomology	Serere (NaSARRI) Station
New office building with conference facility of approx. 350 sq. m; Laboratory building of 200 sq. m	Bulindi (BuZARDI) Station
New office building with conference facility of approx. 350 sq. m;	Nakyesasa Station
New Conference and Training Facility of approximately 350 sq. m	NaFIRRI, Kajjansi Station
Rehabilitation of the Mini-conference Facility and Ablution Blocks	NAROSEC Entebbe
Rehabilitation (Re-roofing) of the tissue culture laboratory at Kachwekano; New Conference and Training Facility of approximately 350 sq. m	Kachwekano (KaZARDI) Station
Screen house of 148 sq. m	Karengyere Station
New Conference and Training Facility of approximately 350 sq. m; Rehabilitation of water works	Mbarara (MbaZARDI) Station
New office building with conference facility of approx. 350 sq. m; Laboratory building of 200 sq. m	Kamenyamigo Station

Equipment (transitional for ICT) was also procured

Table 60: Equipment procured

Item description	Quantity (Pieces)	Amount (USD)
Desktop computers	50	52,800
UPS'	30 + 2	37,148.76
Servers	2 + 17	217,911.41
Printers	03	7,386.75

Item description	Quantity (Pieces)	Amount (USD)
Photocopiers	03	48,339.41
Projector	01	1,674.42

Through EAAPP funding, which is effectively ending with this Financial Year, the following infrastructure was established.

Figure 23: The Cassava Regional Centre of Excellence under construction by the EAAPP project



Conf. Hall (100-Seater) and Offices (~ 100 staff)

- i. Three office blocks rehabilitated in three different ZARDIs (Abi, Ngetta and Bulindi);
- ii. Two laboratories rehabilitated – Nutritional analysis laboratory, having five laboratories with a capacity of 48 scientist and the other is a Biosciences laboratory have 3 laboratories with capacity of 12 scientists.

All the civil works are at about 90% completion and will be completed before December 2015.

c) The restructured Agricultural Technology and Agribusiness Advisory Services (ATAAS) Project

The Project Objectives:

The Project Development Objective of post Medium Term Review (MTR) ATAAS Project is to “Increase agricultural productivity and incomes of participating households by improving research and advisory service systems”. On the other hand, the Global Environmental Objective is to “Enhance the environmental sustainability and resilience of agricultural production to land degradation and climate risks.

Reasons for restructuring ATAAS:

The motivation to restructure ATAAS arose from findings of the MTR, which included:

- i. The challenge in separating extension service delivery from inputs distribution
- ii. Government reforms, where the extension mandate was transferred from NAADS to MAAIF

The restructuring of ATAAS project presented the following implications:

- i. A revised project scope and modifications to project components and activities
- ii. Changes to institutional and implementation arrangements
- iii. Opportunity to implement the Agriculture Cluster Development Project start-up activities
- iv. Extension of the project end date.

The ATAAS Project Components:

The restructured ATAAS Project has four components, viz.:

- i. Component 1: Developing agricultural technologies & strengthening the National Agricultural Research System (NARS) –NARO
- ii. Component 2: Enhancing partnerships between agricultural research, extension and other stakeholders – NARO and MAAIF
- iii. Component 3: Strengthening Agricultural Support Services – MAAIF
- iv. Component 4: Programme Management, Coordination and Monitoring and Evaluation (M&E) – NARO and MAAIF

d) The East African Agricultural Productivity Programme (EAAPP) Phase II

The First Phase of the project is ending in December 2015. It's required of each country to express interest for phase II. An interest for phase II has been generated by NARO and submitted to MAAIF for onward submission to MoFPED and the World Bank. This phase, once granted, will focus on up scaling technology, value addition and market access, among others.

e) Critical Performance Challenges

- i. Low staff salaries; NARO's Scientists have won the award for best maize breeder in Eastern and Southern Africa for two consecutive years. However, their salaries are the lowest in the region);
- ii. Encroachment on NARO land;
- iii. Limited capacity to produce sufficient quantities of Breeder and Foundation seed;
- iv. Limited funding for agricultural research for development.

3.3.5 NAADS

Introduction

Government restructured NAADS and refocused its mandate to address critical demands

Table 61: Performance Achievement

Commodity	Annual Target (Tons)	Achievement (Tons)	% Achieved	Expected Yield (Tons)	Expected Income (UGX.)	Remarks
Maize seed	3,305.389	3,423.501	103.6	585,418.5 (Tons)	292.7 BN	<ul style="list-style-type: none"> -Delivered maize seed to 111 District Local Governments (DLGs) under Operation wealth Creation (OWC) and the Food Security Initiative for Constituencies -Expected to cover <i>342,350.1 acres</i> among 1,369,400 households. -Exceeded targeted due to increased demand for maize seed through special interventions (e.g. special support to Karamoja sub region)
Bean Seed	2,500	784.43	31.4	13,041.2 (Tons)	19.6 BN	<ul style="list-style-type: none"> -Delivered bean seed to 92 DLGs -Experienced shortage of bean seed on the market; some received less than their earlier allocation while others missed out completely. -Expected to cover <i>19,610.75 acres</i> among 78,443 households.

Commodity	Annual Target (Tons)	Achievement (Tons)	% Achieved	Expected Yield	Expected Income (UGX.)	Remarks
Rice Seed	200	200	100	11,400 (Tons)	4.56 BN	-Delivered rice seed to 39 districts -Expected to cover 8,000 acres among 16,000 households.
Soya Bean	87.1	51.009	58.6	726.750 (Tons)	944 M	-Delivered soya bean seed to 27 districts -Expected to cover 1,275 acres among 5,101 households.
Simsim	27.28	27.28	100	2,915.55 (Tons)	14.5 BN	-Delivered rice seed to 15 districts -Expected to cover 6,820 acres among 27,280 households
Sorghum	137.2	97.2	70.8	23,085 (Tons)	23 BN	-Delivered sorghum seed to 14 districts -Expected to cover 24,300 acres among 97,200 households -Low performance due to failure by a supplier

Commodity	Annual Target (Tons)	Achievement (Tons)	% Achieved	Expected Yield	Expected Income (UGX.)	Remarks
Groundnuts	43.12	43.12	100	819.09 (Tons)	3.3 BN	-Delivered Gnut seed to 39 districts -Expected to cover 1,437 acres among 5,749 households
Cocoa Seedlings	3,290,000	3,151,498	95.8	17,017.29 (Tons)	11.9 BN	-Delivered cocoa seedlings to 18 districts. -Expected to cover 7,003 acres among 28,013 households -Failure by two suppliers to supply
Mango Seedlings	1,125,595	653,875	58.1	3,530,898 Bags	353 BN	-Delivered Mangoes seedlings to 75 districts. -Expected to cover 9,341 acres among 18,682 households -Low performance due to: high number of contracts (over 40) leading to delayed processing and clearance by SG; shortage of materials on market-some suppliers failed to supply on time relative to the planting time

Commodity	Annual Target (Tons)	Achievement (Tons)	% Achieved	Expected Yield	Expected Income (UGX.)	Remarks
Orange/citrus seedlings	2,941,414	2,062,286	70.1	3,712.118 Bags	185 Bn	-Delivered citrus seedlings to 103 districts. -Expected to cover 16,904 acres among 33,808 households -Low performance due to: high number of contracts (over 70) leading to delayed processing and clearance by SG; shortage of materials on market-some suppliers failed to supply on time relative to the planting time
Banana suckers (Tissue cultured)	762,803	525,850	68.9	32,825.520 (Tons)	11.4 Bn	-Delivered suckers to 66 districts -Expected to cover 1,169 acres among 2,337 households -Low performance due to failure by major supplier to make full delivery-materials were affected by disease in the nursery
Irish Potato seed (Bag)	3,704	3,616	97.6	433,368 (Bags)	58.5 BN	-Delivery made in 42 Districts. -Expected to cover 278 acres among 1, 113 households

Commodity	Annual Target (Tons)	Achievement (Tons)	% Achieved	Expected Yield	Expected Income (UGX.)	Remarks
Cassava Cuttings (Bag)	80,000	82,700	103.4	1,765,012 Bags	79 Bn	-Deliveries made in 103 districts -Expected to cover 11,814 acres among 23,629 households -Exceeded target due to increased demand through special interventions
Pineapple Suckers	3,000,000	2,642,521	88	4,752,000 Fruits	3.8 Bn	-Deliveries made in 66 Districts -Expected to cover 264 acres among 1,057 households -Failure by two suppliers to deliver in time relative to planting time
Heifer cattle	5,899	2400	41	17,204,434 Litres	10.3 Bn	Delivery completed in 20 and on-going in 80 Districts. -Slow progress due lengthy process of sourcing heifers *Earlier target of 5,442 revised upwards due to changing priorities of some DLGs (Some districts preferred to convert other enterprises into Dairy Heifers)

Commodity	Annual Target (Tons)	Achievement (Tons)	% Achieved	Expected Yield	Expected Income (UGX.)	Remarks
Pasture Seeds	26,667 Kgs	5437 Kgs	20.4	-	-	Planting of 5437Kgs is on-going in 8 Districts. -Slow progress due limited experience with procurement of pasture seed and therefore absence of appropriate procurement arrangements initially, and generally a complex process. * Strategic intervention for pasture improvement in the dairy subsector focusing on pasture seed multiplication in 8 Districts within the cattle corridor
Beef (Beef Bulls)	390	-	-	N/A	N/A	-Procurement completed; delivery expected end of September -Slow progress due to the challenges related to slow response/action by the contracted suppliers-apparently due to price changes on the market compared to the price offered by suppliers at the bidding stage *19,500 cows to be served by the 390 bulls at a rate of 1 bull serving 50 cows per annum.

Commodity	Annual Target (Tons)	Achievement (Tons)	% Achieved	Expected Yield	Expected Income (UGX.)	Remarks
AI kits	50	-	-	N/A	N/A	<p>- 50 AI kits have been imported into the country and delivery to the 50 beneficiary districts expected by Mid-September.</p> <p>-Slow progress due to complex procurement process related to importation.</p> <p>*50 sets will serve 13,000 cows per annum; each set serves 260 cows per annum.</p>
Goats	3,484	2,292	65.8	4,500	1.5 Bn	<p>Delivery completed in 17 districts and ongoing in 11 districts</p> <p>-Experienced challenges related to sourcing and handling at destination points (e.g. requirement for holding grounds)</p> <p>*Targeted at household level (3,284) and community level (200 billy goats)</p>
Pigs (gilts, boars)	1,842	1,442	78.3	27,000	7.4 Bn	<p>-Deliveries completed in 20 districts and ongoing in 2 districts</p> <p>-Delivery affected by outbreak of African Swine fever in some districts</p>

Commodity	Annual Target (Tons)	Achievement (Tons)	% Achieved	Expected Yield	Expected Income (UGX.)	Remarks
						*Targeted at household level (1,500 gilts) and community level (249 boards)
Layers	219,830	144,197	65	1,809,934	14.5 Bn	Deliveries completed in 20 districts and on-going in 18 districts for 439 beneficiary households Initially, experienced low response by potential bidders leading to changes in procurement strategy hence delay
Kuroilers	12,000	12,000	100	1,368,000	364.8M	Kuroilers delivered to 400 households in 6 districts *Support for special interest groups

Commodity	Annual Target (Tons)	Achievement (Tons)	% Achieved	Expected Yield	Expected Income (UGX.)	Remarks
Fish (Unit)	1,808,010	-	-	1,627,209 Fingerings	16.3 Bn	-Procurement of fish fingerings and start up feed package completed; and deliveries to 35 districts for 363 beneficiary households/groups expected beginning of September. -Experienced challenges related to sourcing such as validation of hatcheries and feeds
Apiary Units	28	-	-	4,480 Kgs	45M	Training of beneficiaries completed; delivery ongoing in 6 districts (3 districts in West-Nile: Maracha, Zombo and Yumbe and 3 districts in Karamoja: Napak, Amudat and Moroto). *Unit comprise: 10 Hives, handling and protective gears, and processing equipment). Expected Annual yield for 1 unit is 160 Kgs

Commodity	Annual Target (Tons)	Achievement (Tons)	% Achieved	Expected Yield	Expected Income (UGX.)	Remarks
Maize Milling equipment with Engines/Motors & Installation -(Set)		20	-			<p>Procurement completed; delivery expected by Mid-September, 2015; to beneficiaries in 13 districts:</p> <p>Rukungiri (1), Buikwe (1), Buyende (2), Wakiso (1), Mityana (1), Ibanda (1), Kasese (1), Kamuli (1), Kabalore (3) and Nakaseke (1), Namayingo (2), Isingiro (2), Kamwenge (2).</p> <p>-Slow progress related to readiness by the target beneficiaries e.g. putting in place the required structures for installation of maize mills</p>
Milk Coolers and Matching Generators (including installation) - (Set)		15	-			<p>-Procurement completed; delivery into the country expected by Mid-September, 2015;</p> <p>-Slow progress due to challenges related to importation</p> <p>*Targeted for Dairy farmer cooperatives/associations in 13 districts.</p>

Commodity	Annual Target (Tons)	Achievement (Tons)	% Achieved	Expected Yield	Expected Income (UGX.)	Remarks
Feed milling equipment with Engines/Motors & Installation - (Set)	5		-			Procurement completed; delivery expected by Mid-September, 2015; to beneficiaries in 5 districts: Namayingo, Manafwa, Kamwenge, Rukungiri, and Sembabule. -Slow progress related to readiness by the target beneficiaries e.g. putting in place the required structures for installation of maize mills
Installation of Solar water pumping systems	12		1			Installation completed in Luuka and Works on going in 8 Districts of Kaberamaido, Kumi, Soroti, Mukono, Katakwi, Masindi, Kiryandongo, and Kabale
Motorised Knapsack Sprayers		150	150			Delivered to beneficiaries 17 sub-regions: West Nile (8), Masaka (8), Busoga (9), Mubende (8), Lango (9), Bunyoro (6), Sebei (5), Mengo (9), Ankole (9), Teso (20), Kigezi (10), Karamoja (5), Bukedi (9), Acholi (10), Bugisu (10), Madi (5) and Toro (10) **Special intervention control of pests and diseases in coffee, fruit tree crops (citrus, mangoes, apples) and tea

3.3.5.1 Challenges

Several challenges were experienced during the period under review, notably;

- i. Delayed implementation due to the change in mandate and restructuring;
- ii. Low capacity for supply of planting materials, particularly vegetative materials;
- iii. Lack of adequate budget for facilitating operational activities related to management of distribution of agricultural inputs, such as technical inspection and supervision, monitoring and verification;
- iv. Supporting/building capacity for multiplication of improved and quality planting and stocking materials through the Zonal Agricultural Research and Development Institutes (ZARDIs).

3.4 Institutional Development and Reforms

3.4.1 Introduction

MAAIF developed and implemented the Agricultural Sector Development Strategy (DSIP) 2010/20011-2014/2015 to among others respond to the national and regional policy frameworks including the Comprehensive Africa Agriculture Development Programme (CAADP). As part of the implementation of its Sector DSIP, the Ministry (MAAIF) in the F.Y 2014/2015 identified and implemented a number of interventions under Programme 4 of the Agricultural Sector Development Strategy (DSIP), which focused on ensuring that sector institutional structures and systems are in place and optimally configured to achieve impact.

3.4.2 Key Institutional issues

The key institutional issues that the Ministry (MAAIF) sought to address include:-

Review of MAAIF Structure

In June 2014, Cabinet under Minute 186 (CT 2014) directed the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) to adopt the "Single Spine" Agricultural Extension System. Mainstreaming of Agricultural Extension delivery system directly affected the effectiveness of the 2008 structure, the structure, became 'sub-optimal' to implement the DSIP effectively. This required reorganization of MAAIF structure for effective coordination.

Therefore in 2014, MAAIF planned to implement the following interventions:

- i. The Ministry planned to reorganise its structure for effective coordination.
- ii. The Ministry planned to recruit and fill all vacant positions under its approved establishment to strengthen its capacity to provide quality services to its clients.

3.4.3 Linkages and Coordination between MAAIF HQ and LGs

Local Governments (LGs) have a lot of responsibilities for the implementation of DSIP and delivery of agricultural services. MAAIF and its agencies work through and with LGs to ensure that sector objectives are achieved. Therefore, successful implementation of the Single Spine Agricultural Extension delivery system reform requires strengthening linkages and coordination between MAAIF HQ and LGs.

During the F.Y.2014/2015, the Ministry planned to:-

- i. Conclude the review of DLG Production Department structures for both at DLG headquarters and Sub counties including
- ii. Obtain approval of DLG Production Department structures for both at DLG headquarters and Sub counties
- iii. Lobby for resources to enable DLGs recruit extension workers for effective and efficient implementation of the new agricultural extension system.

3.4.4 Linkages and Coordination between MAAIF HQ and Agencies

MAAIF has seven (7) sector agencies i.e. NAADS, NARO, UCDA, DDA, CDO, NAGRC&DB, and COCTU whose mandates bestow a level of independence. Because of this and possibly other reasons their linkages and coordination with MAAIF HQ has remained inadequate.

Secondly, MAAIF has two agricultural training institutions, namely; Bukalasa Agricultural College and the Fisheries Training Institute which were transferred from Ministry of Education and Sports to MAAIF in FY 2010/11 following a Cabinet Decision in May 2010. The training Institutions are strategically positioned to play a vital role in the transformation process of the sector. In particular, they are positioned to contribute to capacity development for the wider farming community through provision of practical hands-on training as well as a variety of other tailor made skills development programmes.

Therefore, during 2014/2015, the Ministry planned for the following interventions:-

- i. To review linkages with its agencies to enable the Ministry (MAAIF) improve service delivery in the Sector.
- ii. To restructure NAADS Secretariat in line with the Cabinet directive
- iii. To mainstream the two agricultural training institutions, namely; Bukalasa Agricultural College and the Fisheries Training Institute into MAAIF Structure.

3.4.5 Location of MAAIF HQ and Agency Offices

The location of MAAIF Headquarters in Entebbe has exacerbated efficiency and losses, both in time and money given that most MAAIF agencies as well as stakeholders (e.g. private sector, farmers' organisations, development partners, civil society, and line ministries) are in Kampala. Therefore in keeping with the recommendations of the DSIP, in 2014 the Ministry planned to shift MAAIF Headquarters from Entebbe to Kampala.

3.4.6 Capacity Gaps in the Agricultural Sector Staff

The productivity of agriculture sector personnel has continued to be adversely affected by a number of challenges, including; under-resourcing of technical and management training; delays in implementation of capacity building programmes; lack of appropriate tools and equipment to enable sector personnel to effectively execute their roles and responsibilities and weak communication and management systems. To address the issue of capacity building in MAAIF, the Ministry identified and planned for three outputs namely:-

- i. Enhancing capacity and competences of sector personnel,
- ii. Retooling and equipping personnel of MAAIF and agencies, and
- iii. Retooling and equipping district offices.

3.4.7 Progress to-Date in respect of Institutional Strengthening in the Sector

3.4.7.1 Reconfiguring MAAIF and its agencies

a. Restructured MAAIF

Accordingly MAAIF has achieved the following:-

- i. Re-organized its 2008 Structure and functions to integrate the extension function, including establishment of a Directorate of Extension Services. The Establishment of the Directorate of Agricultural Extension services under MAAIF is to provide for the effective and efficient coordination of Agricultural Extension Services in the country.
- ii. Secured approval of the Directorate of Extension Services (DAES) by the MoPS and its implementation started on 1st July 2015. The creation of the DAES was approved riding on the trade-off of the Directorate of Support Services (DASS).
- iii. Temporary deployment of staff under DAES was done, currently 18 technical staff and 12 support staff are currently assigned to discharge the function of DAES.

b. Improved linkages and Collaboration with Local Governments

With regard to improving linkages and collaboration with LGs, the following have been achieved:-

- i. The structure for District Local Government Production and Marketing Department and sub counties was approved and communicated to all DLGs.
- ii. The Ministry adopted the "Single Spine" Agricultural Extension System and started implementing it effective 1st July 2014.

- iii. The Ministry developed Guidelines for implementation of the Single Spine agricultural Extension System to assist various stakeholders to effectively and efficiently implement the National Agricultural Extension System.
- iv. The Ministry also developed Standard Operation Procedures (SOP) to ensure institutional compliance regarding feedback and feed-forward mechanisms.
- v. The awareness/sensitization of Single Spine Extension System is on-going.

c. Improved Linkages and Collaboration With Semi-Autonomous Agencies

To improve linkages and collaboration with semi-autonomous agencies, the following interventions have been made:-

- i. Strengthening the Agricultural Sector Working Group (ASWG). ASWG is a consultative mechanism for formulation and monitoring of public expenditure, policy formulation and setting of priorities in the agriculture sector. It is composed of MAAIF senior staff, representatives of other MDAs, development partners, the private sector and civil society.
- ii. MAAIF restructured the National Agricultural Advisory Services (NAADS).
- iii. NAADS was restructured to ensure that all the rural homesteads engage in commercial farming and food security.
- iv. The NAADS Secretariat has been retained in the form and function of a reduced and lean Secretariat, managed by experts in crop and animal husbandry as well as value addition.
- v. PMA Secretariat was abolished and its functions mainstreamed in Agriculture planning and Policy department.

d. Mainstreaming Agricultural Training Institutions into MAAIF

In order to improve the Training Institutions' performance;

- i. MAAIF identified and obtained approval for a development project under the Ministry to enable Government to comprehensively revamp the training institutions in a phased manner.
- ii. MAAIF will support ATIs among others, to review their mandate, assess the current status of the institutions in terms of financing and infrastructure, capacity and student intake, review and update the curriculum with the view to re-orienting and aligning them to the DSIP objectives,.
- iii. The World Bank and Government of Uganda through the Ministry of Education and Sports have formulated a project code named Skills Development Project (SDP) to enhance Skills Development in the country. Under this project, Bukalasa Agricultural College is being supported to become a Centre of Excellence (CoE).

e. Progress made towards relocating MAAIF to Kampala

- i. MAAIF signed a contract with M/S Arch Consult Uganda Limited for the provision of consultancies for MAAIF House at Plot 2-10 Spring Road, Bugolobi.
- ii. The architectural and detailed engineering designs were approved by National Environment Management Authority (NEMA) and Kampala Capital City Authority (KCCA).
- iii. MAAIF TPM has approved the final design.
- iv. MAAIF is looking for funds to start the construction.

f. Harmonization of NAADS, MAAIF and Local Government Budgets:

The following has been achieved:-

- i. MAAIF harmonized the budget of Agricultural Sector to support the implementation of Single Spine Extension System.
- ii. MAAIF, National Planning Authority (NPA) and Ministry of Finance, Planning and Economic Development (MFPED) harmonized resources under the NAADS program to support both the procurement of inputs and implementation of the Single spine extension system.
- iii. The ATAAS component of NAADS was handed over to MAAIF Extension.
- iv. Some vehicles and office equipment previously under the Advisory services of NAADS were handed over to MAAIF to support the operations of the new Directorate of Agricultural Extension Services.

g. Capacity Building in MAAIF

The implementation of the planned outputs under capacity building is largely dependent on the implementation of the new structure of the Ministry. However, the Ministry has made some modest progress as follows:-

- i. The ministry has prepared a three year capacity building plan for the agricultural sector well aligned with the DSIP objectives. The Capacity building plan highlighted the financing modalities for integration and development of agricultural sector personnel. The proposal was approved by the World Bank and MAAIF is looking for funds to support some of the priority areas identified by the Capacity Building Plan.
- ii. Professional training opportunities have been extended to the Ministry staff through bilateral arrangements where 56 staff from the Ministry and 52 staff from DLGs participated.

h. Filling Vacant Posts in the Approved Structure Under MAAIF

Steps have been taken to fill vacant positions in the current structure of the Ministry so as to strengthen capacity in MAAIF as follows:-

- i. Out of **754** of the approved establishment, **502** positions have been filled representing **66.58%**.
- ii. Out of the **250** vacant positions **91** positions are already with PSC for processing;
- iii. The remaining 159 positions have zero funds for recruitment during financial year 2015/16.
- iv. MAAIF has written to the Ministry of Public Service requesting for an additional **UGX 2,172,404,556** to enable the Ministry to fill critical positions under different Directorates.

i. Capacity Building in District Local Governments

Following the approval of the "Single Spine" Agricultural Extension System, MAAIF has undertaken the following activities:-

- i. Terminated contracts of NAADS staff in District Local Governments.
- ii. Identified all vacant posts at DLGs and Sub county levels that require filling i.e. at district level, there are **1,443** approved agricultural technical positions on the Structure for Production and Marketing at district headquarters and **3,236** positions at the sub county.
- iii. Analysed and costed all vacant posts at DLGs and Sub county levels to guide recruitment.
- iv. Ministry of Public Service in collaboration with MAAIF has provided guidance on the recruitment, including guidance on the management of former Production Staff previously under mainstream public service and joined NAADS.
- v. **UGX 10 billion** has been provided this F.Y. for recruitment of extension staff in DLGs.
- vi. Recruitment of Extension Workers in the District Local Governments is on-going.
- vii. NAADS resources; namely vehicles, motorcycles, office equipment have been rationalised to support the effective implementation of Agricultural extension services.

3.4.8 Conclusion

During the review period of FY 2014/15, Institutional Development and Reforms in the Agricultural Sector has proceeded well subject to constraints related to the approved budget estimates for the Financial Year. This largely affected financial and human resources capacity in the sector.

It worth noting that Institutional Development and Reforms in the Agricultural Sector requires patience and sustained commitment by all institutional actors. Therefore, all key institutions/actors are enjoined to support planned institutional development and reforms in the agricultural sector.

CHAPTER FOUR: OVERALL CONCLUSIONS

4.1 Overall Performance

In summary, the review indicates that:-

- a) With regard to budgetary performance MAAIF and agencies have the capacity for resource absorption;
- b) Sector plan implementation has contributed to positive outcomes like national economic growth, low inflation and enhanced food and nutrition safety on the basis of updated data;
- c) Volumes and values of crops, livestock and aquaculture portray a mixed picture with increases and declines for the various commodities;
- d) The sector registered service delivery improvements and increment in the area of water for agricultural production, mechanization as well as pest, vector and disease control although several challenges continue to impede efficiency and effectiveness of delivery;
- e) Certification and regulatory services are gradually improving and indicate modest contribution to increments in production;
- f) Several policies have been formulated, reviewed, approved and even launched while a number are at dissemination stage. However, most of policies are still at draft stage and still in the process of consultation;

4.2 Sub Sector Performance

Crop

Apart from cash crops, the growth targets for agricultural GDP and sub-sectors set in NDP1 have been missed. The medium term average growth rates are also below the baseline (2009/10) growth rates. Production of major food crops increased from 14,150 million kg in 2009 to 14,600 million kg in 2014, representing an average annual increase of 1.4%. The area planted increased from 5.1 million ha to 5.8 million ha, which averages to an annual increase of 2.0%. Production increased for cotton, cocoa, tea and oil palm commodities between 2013/14 and 2014/15, while coffee declined.

Livestock

There was a remarkable increase in the population of livestock national herd when comparisons are made with data from the livestock census estimates of 2008. This can be attributed to genetic improvement from NAGRC&DB in addition to improved livestock husbandry and control of disease and vectors. The capacities for disease surveillance, investigation and control at national and local government levels have been strengthened. The private sector has also established a vaccine production plant and a veterinary drugs factory to supplement the imported vaccines. Tsetse monitoring, detection and control, animal screening and treatment were carried out in areas that are infected with tsetse flies