

Vote: 142 National Agricultural Research Organisation

Structure of Submission

QUARTER 4 Performance Report

Summary of Vote Performance

Cumulative Progress Report for Projects and Programme

Quarterly Progress Report for Projects and Programmes

Submission Checklist

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QUARTER 4: Highlights of Vote Performance

VI: Summary of Issues in Budget Execution

This section provides an overview of Vote expenditure

(i) Snapshot of Vote Releases and Expenditures

Table V1.1 below summarises cumulative releases and expenditures by the end of the quarter:

Table V1.1: Overview of Vote Expenditures (US\$ Billion)

(i) Excluding Arrears, Taxes	Approved Budget	Cashlimits by End	Released by End	Spent by End Jun	% Budget Released	% Budget Spent	% Releases Spent
Recurrent Wage	15.409	N/A	18.031	18.031	117.0%	117.0%	100.0%
Recurrent Non Wage	9.132	24.481	9.471	9.471	103.7%	103.7%	100.0%
Development GoU	9.547	2.299	6.215	6.215	65.1%	65.1%	100.0%
Development Donor*	48.990	N/A	38.551	29.473	78.7%	60.2%	76.5%
GoU Total	34.088	26.780	33.717	33.716	98.9%	98.9%	100.0%
Total GoU+Donor (MTEF)	83.078	N/A	72.267	63.190	87.0%	76.1%	87.4%
(ii) Arrears and Taxes Arrears	0.000	N/A	0.000	0.000	N/A	N/A	N/A
(ii) Arrears and Taxes Taxes**	17.368	N/A	1.600	1.600	9.2%	9.2%	100.0%
Total Budget	100.446	26.780160	73.867	64.790	73.5%	64.5%	87.7%
(iii) Non Tax Revenue	4.241	N/A	2.261	2.286	53.3%	53.9%	101.1%
Grand Total	104.687	26.780160	76.129	67.076	72.7%	64.1%	88.1%
Excluding Taxes, Arrears	87.319	26.780160	74.529	65.476	85.4%	75.0%	87.9%

* Donor expenditure information available

** Non VAT taxes on capital expenditure

The table below shows cumulative releases and expenditures to the Vote by Vote Function :

Table V1.2: Releases and Expenditure by Vote Function*

Billion Uganda Shillings	Approved Budget	Released	Spent	% Budget Released	% Budget Spent	% Releases Spent
VF:0151 Agricultural Research	87.32	74.53	65.48	85.4%	75.0%	87.9%
Total For Vote	87.32	74.53	65.48	85.4%	75.0%	87.9%

* Excluding Taxes and Arrears

(ii) Matters to note in budget execution

The mandate of NARO is to provide oversight, coordination and implementation of agricultural research in all aspects of crops, livestock, fisheries, forestry and natural resources. . To fulfil its mandate and mission, NARO receives support from Government of Uganda (GoU), under the Recurrent and Development Expenditure and the World Bank for the ATAAS and EAAPP, JICA, USAID, KAFACI and other development partners. The organisation's impact is based on three major outputs. That is:

1. Technology generation
2. Research – extension - farmer interface
3. Institutional capacity strengthening

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The outputs are delivered through core funding to 15 Public Agricultural Research Institutes (PARIs) and competitive grants to other research service providers.

1. Technology generation

NARO concentrated on the ten priority commodities recommended by cabinet i.e coffee, tea, maize, Beans, Cassava, Rice, cotton, dairy, beef, and fish. However, researchable issues in other commodities was given due attention. These commodities include but not limited to Potato, Sweet potato, Wheat, barley, sorghum, sunflower, millet, groundnuts, sesame, poultry, commercial fruits, citrus, mangoes, apples, pears. Also included are apiary, forests, Agroforestry and plantation forest trees, wood and non wood forest products, energy and water.

2. Research – extension - farmer interface

Every effort has been made to reinforce the research and extension interface. Foundation seed was provided to seed companies and farmer groups; breeder seed provided to seed companies; clean/improved planting materials multiplied and availed to uptake pathways; on station and on-farm trials conducted; technology demonstrations held on station and technology parks; capacity of farmers and farmer groups to make choices and implement decisions that affect their livelihoods enhanced; dissemination and training workshops and seminars held for scientists, policy makers, field extension staff, subject matter specialists and other service providers; designed and developed extension dissemination materials, farming manuals, publicity and news articles, and radio talk shows conducted. Achievements have been outlined in the cumulative sections of the this report.

Challenges

- There has been the government restriction on purchase of vehicles. NARO provides oversight to public agricultural research institutes located in remote areas characterized by tough rugged terrain. Hence, the continued need for the availability of new vehicles equal to the task and the terrain. There is need to for the government to consider lifting this restriction on the organization or selectively implement the restriction. The current fleet of vehicles needs to be reinforced in numbers and quality. This restriction has continued to affect the execution of the research agenda.
- Government has instituted a 20 million shillings limitation on the amount of funds drawn per month per vote. This has hampered the progress of activities under the ATAAS and EAAPP projects. This in turn has affected the absorption capacity of the organisation
- During the FY 2012-2013, there were significant shortfalls in funds released to the organization. This affected the overall performance of the organization during the FY considering that there were new planned activities and also the need to sustain ongoing activities. Budget cuts in Quarter four Financial Year 2012/13 affected implementation of planned activities.
- Despite of the ongoing effort to improve on the timely release of Funds, the actual disbursement of funds to NARO is still behind the agricultural seasons in most parts of the country.
- There is a government restriction on purchase of vehicles. NARO provides oversight to public agricultural research institutes located in remote areas characterized by tough rugged terrain. Hence, the continued need for the availability of new vehicles equal to the task and the terrain. There is need to for the government to consider lifting this restriction on the organization or selectively implement the restriction. The current fleet of vehicles needs to be reinforced in numbers and quality. This restriction has continued to affect the execution of the research agenda.
- There is also the retention of scientist in up country stations.intends to find solutions to overcome the above constraining issues so as to improve the Vote Budget Performance in theFY 2013/14.

NARO will seek to find solutions to overcome the above constraining issues so as to improve the vote budget performance in theFY 2013/14.

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Table V1.3: High Unspent Balances and Over-Expenditure in the Domestic Budget (Ushs Bn)

<i>(i) Major unspent balances</i>	
<i>(ii) Expenditures in excess of the original approved budget</i>	
Programs and Projects	
2.92Bn Shs	Programme/Project: 01 Headquarters
Reason: The over expenditure is on account of a reallocation made towards contract staff salaries	
* Excluding Taxes and Arrears	

V2: Performance Highlights

This section provides highlights of output performance, focusing on key outputs and actions implemented to improve section performance.

Table V2.1: Key Vote Output Indicators and Expenditures*

<i>Vote, Vote Function Key Output</i>	Approved Budget and Planned outputs	Cumulative Expenditure and Performance	Status and Reasons for any Variation from Plans
Vote Function: 0151 Agricultural Research			
Output: 015101	Generation of agricultural technologies		
<i>Description of Performance:</i>	1. Technologies for enhancing productivity of - Crops (new, intermediate), - Livestock (new and intermediate), - Fisheries (new and intermediate) - Forestry (new and intermediate). 2. Cross cutting outputs to include but not limited to the Environment, HIV/AIDS 3. New varieties of submitted for release 4. New CGS studies conducted	1. Crop varieties released: 7 bean varieties released: NABE 17,18,19,20,21,22 & NABE 23; 2 – Bananas (M19 and M20), 11 – Maize, 4 rice 2. Crop varieties submitted for release: 4 - Climbing beans (1) F4: 834ML-14/4 (dark red mottled), (2) F4:834ML-2/3 (Pinkish), (3) F5:8 90ML-2/1/3a, (Light red mottled) and (4) F6:8 90 ML-5/13 (Red); 1- cassava, 7- rice upland, 5 - rice paddy, 3 - wheat 3. Used MAS to select resistant bean plants to anthracnose, angular leaf spot and phythium root rot diseases for introgression into climbing bean variety NABE 12C to generate 2nd backcross hybrid. 4. Determined bean genotypes BRB 194, MORE 88002, NUA 99, NUA69, RWR 2154, and RWR 2245 most resistant to angular leaf spot, common bacterial blight and flower leaf spot across many locations in order to promote nutrient dense bean lines. 5. Identified 100 prioritised core research projects to be undertaken in the PARIs once they have passed ESMF screening and/or those with fully developed mitigation	CGS under performance was due to the time available to achieve the planned outputs. Calls profiles under 5 themes were developed and advertised in the national press. 89 concept notes have been received from 85 interested stakeholders. At the close of the FY, the vetting process had not been initiated. It is anticipated that about 40-60 research projects proposals will be developed once the vetting process has been accomplished. These planned outputs will be achieved next FY 2013-2014.

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Vote, Vote Function Key Output	Approved Budget and Planned outputs	Cumulative Expenditure and Performance	Status and Reasons for any Variation from Plans
		<p>measures.</p> <p>6.Developed a proposal for eradication of Banana Bacterial Wilt (BBW) in Uganda. A task force has been put in place, and PARIs within the Lake Victoria Crescent Agro-ecological zones have been encouraged to integrate research on BBW in their work plans.</p> <p>7.Conducted a one – month banana bacterial wilt control campaign in 13 districts</p> <p>8.National launch of the banana bacterial wilt control in Uganda was launched in Mbarara. BBW Management committees (platforms) were established in all the 8 hotspots in the 4 districts of the Kigezi region</p> <p>9.Planted 121 demonstration plots of M9, FHIA 17 and M2 in Eastern Uganda (Iganga, Bugiri, Kamuli, Sironko, Mayuge and Mbale)</p> <p>10.Supported the 13 on-going Competitive Grant Scheme studies which are due for completion. New CGS call profiles have been developed and are to be advertised. Forty new studies are expected to be implemented.</p> <p>11.Under Soil and Land LM trial on optimising fertiliser application recommendations on maize and rice in Kasese and Nakasongola was established during 2012B.</p> <p>12.Developed a decision support tool for Integrated soil fertility management</p> <p>13.Contributed to 11 regional projects as by-ins to previous and some on-going studies. These include 1 (soil management options)-ASARECA; 1 (Fertiliser optimiser decision support tool)-AGRA, 1 (Crop/livestock integration for sustainable management of natural resources)-ASARECA; and 8 (EAAPP: cassava, rice, wheat and dairy regional projects).</p> <p>14.Climate change adaptation innovations mapped, i.e. in</p>	

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		<p>agriculture: water harvesting, small scale irrigation, use of organic pesticides. And in the energy sector - use of wind, solar energy, & biological waste to generate energy, e.g. biogas</p> <p>2. Fisheries</p> <p>15. One 2000-m³ earthen pond prepared for happa fry nursing and brood stock holding.</p> <p>16. Established breeding levels in Lake Edward. Fishes in the river-mouth habitat showed the highest level of breeding.</p> <p>17. Three reconnaissance surveys were conducted in the inshore waters of the Ugandan part of Lake Victoria.</p> <p>18. 147 fish breeding nursery areas of Lake Victoria were identified, characterized and mapped targeting protection of Nile perch, Tilapia and Mukene</p> <p>19. Established pollution levels and their impacts on the environment and aquatic biota in the northern part of Lake Victoria. Eutrophication results in algal blooms and proliferation of water hyacinth were generated.</p> <p>20. Established status of the hydrology and hydrometeorology; physico-chemical parameters and lake productivity processes; composition, diversity and relative abundance of fishes, fishery and fishery yield, biological and ecological characteristics of fishes; livelihoods and adaptation strategies for the Lakes Wamala and Kawi.</p> <p>21. Geo-referenced map and database on trends and impacts (profitability and constraints) of fish farming to livelihoods in Central Uganda were generated for 90% (820 fish farmers). The output allows fish farmers and government to enhance profitability while intervention is moved to other regions.</p> <p>22. Three water reservoirs (constructed for cattle use) were identified as suitable for</p>	

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		<p>stocking with fish and more reservoirs to be identified will be forwarded to MAAIF for implementation (fish stocking of commercial dams) in Isingiro, Sembabule and Nile Districts.</p> <p>23.The Central and Eastern parts of Lake Victoria were surveyed to identify suitable cage culture sites out of which, 17 bays were investigated, from which, 10 sites were physico-chemically characterized, with six found suitable for cage culture and Low Volume High Density (2x2x2 to 5x5x2.5m) cage operations, and four (>5x5x5m cages) for bigger operations which can be started following permit (i.e NEMA, DFR, DWD) applications</p> <p>24.Lake Victoria: An increase in fishing factors (boats, fishers, gears) from 2010 to 2012 and influx of under-size nets and hoots (380% increase) requires much more vigilance by enforcement agencies through curbing of illegal fishing practices that may require seasonal closures. Similar patterns were observed from the studies on Lake George, Edward and Kazinga Channel as well as Lake Albert and Albert Nile. All these output results have been packaged as draft reports for peer review and presentation to wider audiences.</p> <p>25.Natural feed (insects and plankton) availability in Lakes Edward and George were determined as adequate to sustain the suppressed fish populations in those lakes while ingredients for feed formulations were identified in three zones (Central, Eastern and Northern Uganda).</p> <p>26.55 potential fish breeding and nursery areas on Lakes Edward-George system were identified, characterized and mapped for targeting their gazettement</p> <p>27.Two candidate ornamental</p>	

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		<p>fish species from Lake Victoria were identified for development into cultured species</p> <p>28. Completed on-station induced spawning of <i>Barbus altianalis</i> (Kisinga) with 203 larvae</p> <p>29. Characterized fish disease pathogens from 12 fish farms and two hatcheries</p> <p>30. 120 brood fish of Nile tilapia were acclimatised on-station as parent stock</p> <p>31. A draft policy brief on heavy metals (Lead, Zinc, Copper, Iron, Manganese and Nickel) in Lake Victoria was started based on findings in sediments and bottom waters of the lake.</p> <p>32. Two Geo-referenced maps were prepared showing aquatic weed sports in the Western and Central zones of Lake Kyoga, and the north-western part of Lake Kyoga</p> <p>33. Estimates of annual profits, break even points and payback periods for investments in Tilapia, Nile perch and muziri/ragoge fisheries enterprises on Lake Albert generated by March 2013</p> <p>34. Key market destinations, demand, prices and drivers for Nile perch, tilapia and ragoge/muziri from Lake Albert assessed by June, 2013</p> <p>35. Baseline information on fishers' livelihoods around Lake Edward-George established</p> <p>36. Farmers trained on commercialization of orphan crop commodities and farming</p> <p>37. Market linkages between traders' and farmers' groups facilitated through consultations and meetings</p> <p>38. Adoption surveys for the minor crops promoted</p> <p>3. Forestry</p> <p>39. Produced a distribution map on the genetic diversity of Shea tree butter trees.</p> <p>40. 167 superior plus Shea butter trees for use in improvement programmes identified in West Nile, Teso</p>	

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		<p>and northern agro-ecological zones.</p> <p>41. One progeny trial of <i>Faidherbia albida</i> to assess parent offspring relationship established on-station (Kifu – Mukono).</p> <p>42. Three trees of <i>M. Volkensii</i>, 2 trees of <i>G. Robusta</i>, 2 trees of <i>M. Lutea</i> selected and marked as superior phenotypes in West Nile AEZ.</p> <p>43. Two harvesting methods (Debarking and root extraction) for indigenous medicinal trees assessed: Debarking and root extraction for medicinal products threatens the sustainability of indigenous tree species, Alternate debarking recommended over ring barking to enhance sustainable harvesting.</p> <p>44. Survival rate of <i>Pinus caribea</i> and <i>P. caribea caribaea</i> from <i>Cinara cronortii</i> established at Mabuye and Mpoma (Kifu) studies were 83% and 92% respectively indicating that <i>P. caribea</i> is more robust to dry conditions.</p> <p>45. Assessment of the trials at Mabuye and Mpoma in Kifu showed absence of attack from <i>C. cronortii</i> indicating that very early stages of <i>Pinus</i> spp are not preferred by <i>C. Cronortii</i>. Assessments in Kiriima and Mafuga forest reserves showed average damage levels of <i>C. Cronortii</i> as 15%, and 12% respectively. Assessments also showed <i>C. cronortii</i> population as highest in Lower (50.5%), followed by Middle (28.5%) and 21% upper section of crown implying that the pest is a shade loving pest.</p> <p>46. Have identified an exotic parasitoid <i>schlereides neseri</i> for management of the Eucalyptus gall wasp (<i>L. invasa</i>) and in collaboration with Forest Invasive Species Network for Africa (FISNA) intend to import and release it against the pest.</p> <p>47. Produced 30,000 seedlings</p>	

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		<p>of Measopsis, 10,000 seedlings kg of E. grandis and 10,000 seedlings of Albizia chinensis for trial establishment and rehabilitation of degraded areas of Kifu forest.</p> <p>48.Established 3 trial plots of Measopsis, Eucalyptus grandis and A. chinensis in Sironko. Maintained and assessed 8 trials in Kifu and 3 trials in Kyembogo. Results of 1 year show no significant differences in height between spacing regimes.</p> <p>49.Database of 1826 plants for health, nutrition and incomes developed.</p> <p>50.Above ground carbon and below ground carbon for 2 farming systems established: 9503 t/ha found in Masaka (Banana coffee farming system), while below ground carbon (BGC) for Kamuli was 6920t/ha Kamuli (Cotton-millet farming system) (AGC = 91t/ha Soil Carbon was 3500t/ha), 2 more trials were established in the Kamuli and Masaka experimental sites.</p> <p>51.A report on forest products extraction and the forest law in Namatale CFR developed</p> <p>4. Livestock</p> <p>52.Six policies affecting dairy, indigenous chicken and vegetable value chains (the feeds policy, delivery of Veterinary Services, Animal Breeding Policy, Control of Agro-chemicals Statute, National Veterinary Drug Policy and Dairy Industry Act and Animal welfare) were identified and analyzed. They were reviewed with stakeholders. Constraints limiting policy implementation and recommendations for amendments documented.</p> <p>Animal Health Dairy cattle</p> <p>53.Strains of Theileria parva circulating in the different agro-ecological zones in Uganda have been characterised. This is</p>	

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		<p>useful information in improving the ECF (Muguga cocktail) vaccine for prevention and protection of cattle against East Coast fever disease in Uganda. It has also helped us to understand the role of buffalos in the maintenance of Theileria parva and control of East Coast fever.</p> <p>54.A parasite pathogen bank for Theileria parva has been established at NaLIRRI. It now easy to conduct immunology and molecular of study on the organism for development of either vaccine or drugs.</p> <p>55.The genetic structure G. f. fuscipes in the Lake Victoria basin has been established. Since this is one of the most important tsetse flies in the country, it has made it easy to develop intervention strategies for control of tsetse flies in tsetse infested areas in Uganda.</p> <p>56.The distribution maps for tsetse species and trypanosomiasis outbreaks in Uganda have been updated. This has helped in determining the selection of priority study areas in the country.</p> <p>57.Causes of calf and kid mortality in the agro-pastoral farming system, as perceived by the farmers, have been established. This has provided useful information in determining the diseases and conditions to investigate in the immediate future.</p> <p>Goat enterprise</p> <p>58.The worm burden in kids in both the wet (13% strongyloides and 3.5% tapeworms) and dry (36% strongyloides and 14.5%) seasons in one of the districts in Uganda has been determined. Also established is the nutritional content of up to 25 pastures and shrubs on which goats feed. Additionally, the relationship between dry and wet season feeding and worm burden has been established. It has made it easy to develop</p>	

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		<p>feeding and worm control strategies that farmers can use to reduce the worm burden during each season of the year.</p> <p>Poultry enterprise</p> <p>59.Humoral immunity titres of poultry sera against influenza A viruses has been determined for the West (8.8%) and East (3.7%) parts of the country. We have now confirmed that influenza A viruses occur in different regions of Uganda, although at different levels of prevalence. It is now easy to develop measures to prevent further occurrence or transmission away from wetlands.</p> <p>1.Napier stunt disease</p> <p>60.Twenty two (22) Napier grass clones tolerant to Napier stunt disease were obtained from Kenya Agricultural Research Institute and screened for tolerance to Napier stunt disease at NaCRRI. Four tolerant Napier grass clones have been identified and are being multiplied for further distribution to farmers.</p> <p>61.Farmers' awareness on Napier stunt disease control methods has increased- This has led to a decline in disease incidence from 60% to 20%.</p> <p>2.Feed formulation</p> <p>62.A nutrient Feed Block was developed using farm waste and agro-industrial by-products. The cost of the block is lower (UGX 2,000) than imported mineral blocks (UGX 3,500). The Protein content of the Nutrient feed block is 16% and Metabolizable energy is 11MJ.</p> <p>63.The potential of Ugandan Calcium bentonite in animal nutrition was evaluated. Bentonite supplemented cows gave more (10 litres/cow/day) milk than animals supplemented with commercial concentrates (8 litres/cow/day).The aflatoxin and mycotoxin absorbing properties of bentonite also help in reducing the negative impacts</p>	

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		<p>of aflatoxin on feed utilization, growth and milk yield of animals. This ration based on maize stover-calcium bentonite has a potential to increase milk yield increased by 20%</p> <p>64.Brachiaria mulato promoted on 25 farms as an alternative feed resource</p> <p>3.Other socio benefits</p> <p>65.A case study “Climate change technologies for improved livelihoods of smallholder crop-livestock farmers in Eastern and Central Africa region”, an output from the project activities is one of the top case studies selected for the “Finals of the 2012-2013 All Africa-Wide Women in Science Competition which will take place in Ghana, 15th to 20th July 2013.</p> <p>Animal Breeding Dairy cattle breeding</p> <p>66.Over 200 household cattle herds have been screened and 400 cows and heifers with superior dairy traits selected from these herds for genetic improvement through crossbreeding. The selected animals will now kick-start the synchronisation and artificial insemination (AI) using semen from proven Ayrshire and Jersey bulls by NAGRC collaborating partner organization.</p> <p>67.On-station herd of Small East African Zebu cattle established at NaLIRRI with an initial stock of 10 cows and 6 calves under EAAPP.</p> <p>Infrastructure for holding the animals, pastures, paddocks and water and health management systems are being put in place. An exotic herd of 5 Ayrshire heifers for NaLIRRI is held at NAGRC pending completion of infrastructural placements to handles them. The animals will be synchronized and artificially inseminated to produce crossbred offspring for dairy production.</p>	

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		<p>Goat breeding</p> <p>68. On-station experimental unit has established at NaLIRRI. Procurements of experimental goats in progress from NAGRC for studies on meat characteristics of indigenous goats and their Boer crossbreds.</p> <p>69. Genomic selection studies have been initiated for goats with the establishment of 12 goat experimental sites in Katakwi and Mpigi. Phenotypic, performance and pedigree data collection is on-going and will be used to select superior goats using younger animals for faster genetic gain using genomic selection tools.</p> <p>Poultry breeding</p> <p>70. Genomic selection studies continued for chickens at 11 experimental sites with more data on phenotypic, performance and pedigree information being collected for genomic selection in younger animals.</p> <p>71. A tool for characterization of guinea fowls and turkeys has been developed in a participatory manner by involving district extension staff and farmers through a discussion workshop and pre-testing process. The tool which includes questionnaires and sampling protocol are now ready for use in both phenotypic and blood sampling surveys.</p> <p>Pig breeding</p> <p>72. Stakeholders have been sensitized and study sites identified in the districts of Pallisa, Mukono, Masaka and Kiboga as initial phase for characterizing pig breeds and their management system.</p> <p>Apiculture</p> <p>73. Selective breeding of honeybees for increased production of honey and other bee products</p> <p>74. Honeybee colonies have been set at Bulindi ZARDI and NaLIRRI demonstration apiaries to start with bee</p>	

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		<p>breeding experiments. This project intends to come up with bee strains resistant to Varroa and small hive beetles.</p> <p>75.Molecular characterisation of honeybee races and evaluation of their productivity in Uganda</p> <p>76.A total of 200 samples of honeybees for characterisation of Ugandan honeybees have been collected and preserved awaiting analysis. This project will identify bee species that are productive and easy to manage.</p> <p>77.Molecular identification and characterisation of honeybee diseases in Uganda</p> <p>78.Samples of bees for disease identification have been collected and preserve awaiting analysis</p> <p>5. Prototypes Exploitation of renewable energy resources</p> <p>79.On-station evaluation of the model biogas cooking stove appliance completed and on-farm evaluation in progress (Farmer selection done in Jinja and Iganga districts).</p> <p>80.One open-sun drying technology for local rice varieties developed and established on-farm and farmer selection done in Hoima district.</p> <p>81.One model stove prototype for utilisation of rice husks fabricated and being tested on-station; Farmers for on-farm evaluation selected.</p> <p>82.One fireless cooker prototype under fabrication. Farmers for on-farm testing selected in Masaka and Hoima districts.</p> <p>83.9 mouldboards for walking tractor ploughs have been fabricated and under field performance evaluation by farmers in Nankoma, Bugiri district.</p> <p>84.1st prototypes of planter and weeder tested on-farm in Mairerwe, Hoima district. Both planter and weeder undergoing modifications for further evaluation</p>	

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		85.Surface irrigation: Assessment of research needs and works on restoration of Mobuku, Agoro and Doho irrigation schemes Implements for diversifying use of work animals and single axle tractors 86.One prototype of efficient animal-drawn planter for selected small and large grain seeded crops developed 87.On-farm evaluation is in progress of a prototype of stainless steel hopper and cutting surfaces for grating and chipping cassava Water provision and management 88.Three water storage tanks (Lined with HDPE) Constructed in Masaka district for vegetable production. 89.Finalizing fabrication of a pond aerator prototype (diffuser type).	
<i>Performance Indicators:</i>			
No. of research studies under competitive grants scheme	60	13	
No. of production technologies generated	80	90	
No. of new varieties/ prototypes submitted to Variety Release Committee for release	33	28	
<i>Output Cost:</i>	US\$ Bn: 7.509	US\$ Bn: 9.465	% Budget Spent: 126.0%
Output: 015102	Research extension interface promoted and strengthened		
<i>Description of Performance:</i>	1.Foundation seed provided to seed companies; 2.Breeder seed provided to seed companies; 3.Clean/Improved planting materials multiplied and availed to uptake pathways; 4.On-farm trials conducted; 5.Technology demonstrations held on station and technology parks; 6.Capacity of Farmers and Farmer Groups to make choices and implement decisions that affect their livelihoods enhanced; 7.Dissemination and Training workshops held for subject	1.Priority setting conducted at Rwebitaba ZARDI with stakeholders and key areas for research intervention identified. 2.Reviewed and updated NARO priority setting guidelines for demand articulation, and the draft document is ready for submission to NARO Council. 3.Established MSIPs during the reporting period: 2 in Rwebitaba ZARDI (1-cassava 1- banana), 1 Buginyanya ZARDI (coffee), and 1 on livestock control in Mbarara ZARDI. Maize in Kapchorwa, Beans in Wakiso, rice in Ngetta, Coffee in Buginyanya, , Rice and 1	Under performance under technological platforms was due to lack of hands on skills and levelled understanding of the innovation platforms. Considerable capacity was built during the FY for both PARI zonal and NAADS zonal staff. Underperformance on technologies delivered to Ups was due to under targeting

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QUARTER 4: Highlights of Vote Performance

Vote, Vote Function Key Output	Approved Budget and Planned outputs	Cumulative Expenditure and Performance	Status and Reasons for any Variation from Plans
	<p>matter specialists and other service providers;</p> <p>8.Scientific conferences, dissemination workshops and seminars for scientists, extension agents and policy makers conducted;</p> <p>9.Scientific & extension dissemination materials developed and published;</p> <p>10.Design and development of Farming manuals;</p> <p>11.Publicity and News articles developed and published,</p> <p>12.Audio Visuals in English and local languages developed and availed to uptake pathways;</p> <p>13.Radio talk shows conducted;</p>	<p>platform in Soroti (cassava). A rice market chain actors from the districts of Luwero, Kayunga and Kiboga is being established</p> <p>4.Conducted 3 MSIPs capacity strengthening workshops for NARO an NAADS staff at the zonal level</p> <p>5.100 ha of cassava and 60 ha rice multiplication sites established at NaCRRI and all ZARDIs</p> <p>6.Established 5.7 ha of breeder seeds for three rice commercial varieties: NERICA 1, NERICA 4 and NERICA 10.</p> <p>7.Distributed to seed companies and farmer groups 4,825 and 3,500 kg of foundation bean seed, respectively.</p> <p>8.Promoting improved technologies weer promoted Mukono ZARDI delivered 553 Bags for 79 Acres of NASE 14 in 7 districts ,Abi Zardi : re-distributed 965 bags of NASE 14 for planting, 600 bags of NASE 14 redistributed in Ngetta zardi; 15 acre multiplication site established in Kidetok Serere District; Ngetta: 3,048 bags (509 acres); Bulindi:900 bags (150 acres); Mukono: 553 bags (79 acres); Abi ZARDI: 60 bags(15 acres)</p> <p>9. A total of 86 farmer groups trained in bean seed production.</p> <p>10.Distributed 2,323 kg of foundation bean seed (NABE 4, 12C, 15, 16 and K 132) to farmers in Kabale, Kisoro, Kamwenge, Mpigi, Wakiso, Rakai and Bushenyi.</p> <p>11.Distributed 2 mt of rice seed to zonal institutes for multiplication</p> <p>12.15-cassava based cottage businesses mapped in Soroti & Masindi districts</p> <p>13.Capacity to promote GMP of over 80 extension staff built</p> <p>14.Capacity of over 65 artisans to comply to good practices to fabricate cassava processing equipment and hermetic metallic silos built</p>	

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QUARTER 4: Highlights of Vote Performance

Vote, Vote Function Key Output	Approved Budget and Planned outputs	Cumulative Expenditure and Performance	Status and Reasons for any Variation from Plans
		<p>15. Presented cassava-based starch for industrial testing by East African Packaging industries; and Uganda Pulp & paper Industry</p> <p>16. Protocepts of glucose syrups from cassava were developed and presented to partners. The quality meets up to 60% the required standard.</p> <p>17. 9-food formulations for different products developed. Cassava starch of high purity and potential for various uses developed (comparable and in some cases better than cereal starch in some attributes). Riham & Variety Plus Ltd has evaluated a few protocepts.</p> <p>18. Production of foundation bean seed by partners was undertaken and cleaning of harvets is ongoing. Certified and Quality declared seed production was undertaken CEDO and Farmer associations respectively.</p> <p>19. 86 bags of Naspot 8 (Clean/Improved planting materials) multiplied and availed to uptake pathways;</p> <p>20. On-farm trials 75 conducted various ZARDIs across the country</p> <p>21. Technology demonstrations held on station and technology parks - 30 demons held by the PARIs;</p> <p>22. Capacity of Farmers and Farmer Groups to make choices and implement decisions that affect their livelihoods enhanced-2500 in different commodities;</p> <p>23. Dissemination and training workshops held for subject matter specialists and other service providers - 20 different workshops;</p> <p>24. Twenty four radio talk shows were conducted.</p> <p>25. Scientific, extension, dissemination and farming manuals materials were developed and some published. These include</p> <p>a. Training material on CBSD,</p>	

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QUARTER 4: Highlights of Vote Performance

Vote, Vote Function Key Output	Approved Budget and Planned outputs	Cumulative Expenditure and Performance	Status and Reasons for any Variation from Plans
		<p>CMD and whiteflies developed</p> <p>b.10 maps showing prevalence of CBSD and CMD, generated</p> <p>c.One fact sheet on CBSD spread in Uganda produced and shared with stakeholders nationally and Regionally</p> <p>d.Draft guidelines for groundnuts production were developed.</p> <p>e.Draft guidelines for cowpea and sorghum production were developed.</p> <p>f.Two training manuals for the use of forage sorghum for livestock feeding developed.</p> <p>g.Integrated Pest Management (Fruit fly management): About 1200 brochures produced on the ecology of mango fruit flies and distributed to stakeholders. Posters produced and shared with stakeholders</p> <p>h.Published information on situation analysis of agro-chemical use in Central Region</p> <p>i.Draft review script on agro-chemical use in Uganda</p> <p>j.Draft training manual for dairy farmers in Uganda</p> <p>k.2 Information materials developed on 'Use of metal silo' and translated in Lunyoro and Langi</p> <p>l.Draft guidelines groundnuts production & marketing developed</p> <p>m.Sample brochures and leaflets on CBSD management produced and await printing and distribution</p> <p>n.A recipe book for available bean based products and a post-harvest management guide is being developed</p> <p>o.Developed the rice communication strategy</p> <p>p.Cassava curriculum developed participatory with farmers in the EAEZ</p> <p>q.Rice curriculum developed participatory with farmers in the EAEZ</p> <p>r.Manual on Passion fruit Production: Complementary Notes for Extension Workers was repackaged</p>	

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QUARTER 4: Highlights of Vote Performance

<i>Vote, Vote Function Key Output</i>	Approved Budget and Planned outputs	Cumulative Expenditure and Performance	Status and Reasons for any Variation from Plans
		s.Draft paper produced on options for AfRGM management practices	
<i>Performance Indicators:</i>			
No. of technological innovations delivered to uptake pathways	5	10	
No. of technological innovation platforms established/supported	30	15	
<i>Output Cost:</i>	US\$ Bn: 4.283	US\$ Bn: 6.400	% Budget Spent: 149.4%
Output:015105	Generation of technologies for priority commodities		
<i>Description of Performance:</i>	<p>1.Technologies for enhancing productivity of Crops (new, intermediate), Livestock (new and intermediate),</p> <p>2.New varieties of submitted for release</p> <p>3.Foundation seed provided to seed companies;</p> <p>4.Breeder seed provided to seed companies;</p> <p>5.Clean/Improved planting materials multiplied and availed to uptake pathways;</p> <p>6.On-farm trials conducted;</p> <p>7.Technology demonstrations held on station and technology parks;</p> <p>8.Capacity of Farmers and Farmer Groups to make choices and implement decisions that affect their livelihoods enhanced;</p>	<p>Banana</p> <p>1.Launched strategic plan for eradication of Banana Bacterial Wilt in Uganda. Wilt causes losses of up 100% if not controlled. Control using cultural practices of removing male buds, destruction of diseased materials and use of sanitised field cutting tools were promoted. Strategy aimed at reducing BBW from current level of 43% to 5% within one year</p> <p>2.Transgenic banana (dessert) variety resistant to BBW developed. Gene insertion into matooke varieties was conducted</p> <p>3.Transgenic banana (dessert type) bio-fortified with Vitamin A and Iron developed. Gene insertion into matooke lines was conducted</p> <p>4.Two banana varieties: Kabana 6H and Kabana 7H of yields 60 tonnes Ha-1 released</p> <p>Cassava</p> <p>5.Identified and promoted cassava variety NASE 14 that is tolerant to Cassava Brown Streak disease in more than 45 districts in Uganda. CBSD if not managed can cause 100% loss</p> <p>6.100 Ha of cassava multiplication fields established at all ZARDIs, with NASE 14 (MM96/4271). A total of 400 ha of cassava multiplication fields were established in Mid-West sub-region, Lango sub-region and Central region</p>	<p>The funds released are insufficient to conduct all planned activities. Many times available funds are released late. This flow of funds impedes the flow of activities which are in sequential.</p>

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QUARTER 4: Highlights of Vote Performance

Vote, Vote Function Key Output	Approved Budget and Planned outputs	Cumulative Expenditure and Performance	Status and Reasons for any Variation from Plans
		<p>through farmer groups</p> <p>7. Where tolerant cassava varieties to CBSD were released, disease incidence was reduced to <50%</p> <p>8. 80% of cassava varieties released by NARO are resistant to Cassava Mosaic disease</p> <p>9. 25 lines of transgenic cassava, including TME 204, investigated in Confined Field Trials for resistance against CBSD</p> <p>10. Intense conventional breeding programmes resulted into increased starch content of cassava from 35 to 45%</p> <p>11. Facilitated cassava processors' association e.g. Matilong group with Riham Biscuits for supply of high quality chips for biscuit making</p> <p>12. This status report and 10 epidemiological maps have been produced.</p> <p>13. A number of functional real-time Early Warning tools for Major Cassava Pests and diseases have been designed and developed.</p> <p>14. A database for Weather & pest and disease designed. Draft plant and vector mechanistic models developed. Preliminary Pest and Disease ENM developed. Proposed platform for detection and rapid response has been developed</p> <p>Maize</p> <p>15. Succumbed to Maize Lethal Necrosis Disease in Busia, Tororo, Mbale, Bududa and Bugiri districts. The disease affects all maize varieties and can crop losses of up to 100%</p> <p>16. Counterfeit seed was a major problem. To address the issue NARO is trailblazing on finger printing to allow for traceability of Breeder/Foundation seed supplied to seed technology uptake pathway</p> <p>17. Released 11 varieties. UH 5051, UH 5052 and UH 5053, and are being bulked by seed companies: Arolin Seeds, Pearl</p>	

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QUARTER 4: Highlights of Vote Performance

Vote, Vote Function Key Output	Approved Budget and Planned outputs	Cumulative Expenditure and Performance	Status and Reasons for any Variation from Plans
		<p>Seeds and MADIFA, respectively. The varieties are highly tolerant to drought, and with yield potential of 6-7 tonnes Ha-1.</p> <p>18.Under WEMA, NARO identified 8 maize lines that were drought tolerant through conventional breeding</p> <p>19.Confined Field Trial on maize research through genetic engineering for drought tolerance under WEMA continued</p>	
		<p>Rice</p> <p>20.Released 4 rice varieties: NAMCHE 1, 2, 3 and 4 with intrinsic qualities: such as drought tolerance and therefore adaptable to wider agro-ecologies; 15-20% yield advantage over other NERICA previously released; semi aromatic; and yield between 3.5 to 4.2 tonnes Ha-1 under medium fertilizer application on 50 kg N.</p> <p>21.NAMCHE 3 and 4 were bred by NARO, whilst NAMCHE 1 and 2 were from AfricaRice consortium</p> <p>22.NAMCHE 1-4 varieties have been recommended by AfricaRice Breeding Task Force for wider cultivation in Africa under a new acronym of ARICA (Advanced Rice for Africa)</p> <p>23.Released 11 new varieties: Bush type (7) and Climbers (4)</p>	
		<p>Beans</p> <p>24.Bush type: NABE 17, 18, 19, 20, 21, 22 and 23. All the varieties yield on average 2 tonnes Ha-1 under farmer-managed condition but yield potential is 2.5 tonnes ha-1; and are early maturing: 60-65 days as opposed to earlier varieties that take >85 days and therefore good for climate change and variability adaptation</p> <p>25.Climbing varieties: 26C, 27C, 28C and 29C. Varieties yield 2.5 to 3 tonnes ha-1 under low input but with potential of</p>	

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QUARTER 4: Highlights of Vote Performance

Vote, Vote Function Key Output	Approved Budget and Planned outputs	Cumulative Expenditure and Performance	Status and Reasons for any Variation from Plans
		<p>3.5 to 4 tons ha-1; good market attributes of colour and size; and reduced cooking time</p> <p>26.52 mother gardens, each of 350 coffee bushes established in the country for multiplication of 7 coffee wilt resistant varieties established within the country</p> <p>Coffee</p> <p>27. Formed partnership with Agro Genetics Technologies (AGT) for rapid multiplication of clean planting materials of the 7 coffee wilt disease resistant varieties using tissue culture method. AGT has capacity of producing 10 million seedlings per annum</p> <p>28. 10 Robusta coffee varieties resistant to coffee wilt disease are in advanced stage of multi-locational trials in different agro-ecologies for wider adaptation. Varieties on average yield 2 to 3 tonnes ha-1 at 3 to 5 years of establishment</p> <p>29. 4 Arabica coffee varieties resistant to Coffee Rust with average yield of 5 tonnes ha-1 under multi-locational trials. Trials of Coffee berry disease yet to be conducted before release</p> <p>30. Black coffee twig borer was a major menace on Robusta coffee. Infestation results in berry-bearing twigs to dry off and gradual drying of the whole plant if not controlled. Proper agronomic practices e.g. planting densities, rouging affected twigs, pruning etc. recommended. Twig infestation at 8.7% results in US\$ 40 m economic loss.</p> <p>31. Raised 5,955 at COREC (2,815 cuttings and 3140 cuttings) which were distributed to 17 nursery operators</p> <p>32. 4,200 elite coffee seedlings and 1,650 clonal coffee plantlets availed to farmers of Masaka, Mukono, Buikwe, Kayunga and Mpigi Districts.</p> <p>Tea</p>	

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QUARTER 4: Highlights of Vote Performance

Vote, Vote Function Key Output	Approved Budget and Planned outputs	Cumulative Expenditure and Performance	Status and Reasons for any Variation from Plans
		<p>33.Rehabilitated tea fields and tea gene bank at Rwebitaba ZARDI, mapped and identified all the 276 clones available. Information on tea clone names, performance and other attributes however, are still lacking. Existing clones are potential sources of planting materials for multiplication and commercialisation.</p> <p>34.Currently most farmers obtain planting materials from Kenya. Once the 276 clones are fully identified importation of materials from Kenya will be reversed</p> <p>35.Farmers in Kigezi sub-region accessed 6 million tea cuttings from Rwebitaba ZARDI for planting. Likewise farmers from Toro sub-region will be enabled with up to 6 million tea cuttings for establishment.</p> <p>36.Nursery that can produce up to 40,000 seedlings being established at the Institute</p> <p>37.Xylleria spp. disease that causes wilting of tea trees at any stage of growth was identified, and incidences that varied between 15 and 20% reported. Current management method involves field sanitation of uprooting and burning infected trees. Recognition and management of Xylaria wilt and Armillaria root rot demonstrated to field staff</p> <p>Livestock, dairy</p> <p>38.3,000 doses of sexed semen of exotic breeds: Friesian, Jersey and Ayrshire imported. 90% of semen are for female F1 generation</p> <p>39.7,000 doses of unsexed semen of exotic breeds: Guernsey, Brown Swiss, Jersey, Ayrshire, Sahiwal imported for genetic improvement and performance</p> <p>40.155 pure exotic female cattle pedigree of Guernsey, Brown Swiss, Jersey, Ayrshire, Sahiwal breeds imported to promote embryo transfer technique</p>	

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QUARTER 4: Highlights of Vote Performance

Vote, Vote Function Key Output	Approved Budget and Planned outputs	Cumulative Expenditure and Performance	Status and Reasons for any Variation from Plans
		<p>and/or maintenance of pure lines by interested farmers</p> <p>41.Established 4 ha of Napier grass mother garden for planting material multiplication in Jinja and Wakiso. Napier grass forms 80% of feeds for zero grazed animals in Uganda</p> <p>42.Screened and identified 4 highly tolerant and 9 moderately tolerant Napier grass varieties to Napier stunt disease</p> <p>43.Ticks, tick-borne diseases and tick resistance to acaricides was identified major limiting factors to increasing milk productivity</p> <p>44.Straains of Theileria parva, the pathogen that causes East Coast Fever (ECF) transmitted by ticks, characterised. This is useful information in improving the ECF (Muguga cocktail) vaccine for prevention and protection of cattle against East Coast fever disease in Uganda.</p> <p>45.A parasite pathogen bank for Theileria parva established at NaLIRRI, Tororo. It is now easy to conduct immunology and molecular of study on the organism for development of either vaccine or drugs.</p> <p>46.Ticks, tick-borne diseases and tick resistance to acaricides identified as one of the major limiting factors to increasing beef productivity</p> <p>47.Identified unavailability of feeds during dry season/drought periods as a major area of concern, and under CGS NARO has prioritised interventions for hay making for investment</p> <p>48.Improvement of genetic potential of indigenous breeds for increased beef production and productivity using appropriate pest and disease management methods, and as well AI conducted</p> <p>49.Straains of Theileria parva, pathogen that causes East Coast Fever (ECF) transmitted by ticks, characterised. This is useful information in improving the ECF (Muguga cocktail)</p>	

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QUARTER 4: Highlights of Vote Performance

Vote, Vote Function Key Output	Approved Budget and Planned outputs	Cumulative Expenditure and Performance	Status and Reasons for any Variation from Plans
		<p>vaccine for prevention and protection of cattle against East Coast fever disease in Uganda.</p> <p>50.A parasite pathogen bank for Theileria parva established at NaLIRRI, Tororo. It is now easy to conduct immunology and molecular of study on the organism for development of either vaccine or drugs.</p> <p>Fish</p> <p>51. Water hyacinth resurgence and algal blooms in major lakes were threats to fish production and productivity. Problems were associated with pollution of effluents from land and destruction of wetlands and swamps that are natural filters</p> <p>52. Hyacinth infestation of bays affected fish breeding and nursery sites. Mechanical removal of weeds carried out. Use of herbivore beetles to be revamped against water hyacinth</p> <p>53. Conducted surveys on L. Victoria and mapped out 30 fish breeding/nursery sites that need gazetting and protection</p> <p>54. Potential areas for fish cage farming should meet the following criteria: water exchange potential; water depth of not less than 5 m; Oxygen flow at rate of 5 mg per litre; cages placed at least 500 m from shore lines; and cages free from navigation routes or shipping lanes</p> <p>55. Stock assessment of biomass of fish in L. Victoria conducted. Results showed that the total fish biomass has not changed, but there is a change in size structure in favour of small fishes. For instance the required factory size of Nile Perch of 50 cm is greatly violated.</p> <p>56. To improve management and profitability of aquaculture, capacity of farmers have been built in on-farm feed processing, and have been encouraged to use feeds processed at Kajjansi</p>	

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QUARTER 4: Highlights of Vote Performance

Vote, Vote Function Key Output	Approved Budget and Planned outputs	Cumulative Expenditure and Performance	Status and Reasons for any Variation from Plans
		Aquaculture Research and Development Centre of NARO.	
<i>Output Cost:</i>	US\$ Bn: 16.043	US\$ Bn: 4.909	% Budget Spent: 30.6%
Vote Function Cost	US\$ Bn: 87.319	US\$ Bn: 65.476	% Budget Spent: 75.0%
Cost of Vote Services:	US\$ Bn: 87.319	US\$ Bn: 65.476	% Budget Spent: 75.0%

* Excluding Taxes and Arrears

None

Table V2.2: Implementing Actions to Improve Vote Performance

Planned Actions:	Actual Actions:	Reasons for Variation
Vote: 142 National Agricultural Research Organisation		
Vote Function: 01 51 Agricultural Research		
Implementation of research activities under ATAAS and EAAPP.	Foundation seed was provided to seed companies and farmer groups; breeder seed provided to seed companies; clean and improved planting materials were multiplied and availed to uptake pathways; on station and on-farm trials conducted; technology demonstrations held on station; capacity of farmers and farmer groups to make choices and implement decisions that affect their livelihoods was enhanced; dissemination, training workshops and seminars were held for scientists, policy makers, field extension staff, subject matter specialists and other service providers; NARO staff designed and developed extension dissemination materials, farming manuals, publicity and news articles, and radio talk shows conducted;	The availability of funds and the untimely flow of funds affected the number of activities along the research-extension interface

V3: Details of Releases and Expenditure

This section provides a comprehensive summary of the outputs delivered by the Vote and further details of Vote expenditures by Vote Function and Expenditure Item.

Table V3.1: GoU Releases and Expenditure by Output*

Billion Uganda Shillings	Approved Budget	Released	Spent	% GoU Budget Released	% GoU Budget Spent	% GoU Releases Spent
VF:0151 Agricultural Research	34.09	33.72	33.72	98.9%	98.9%	100.0%
<i>Class: Outputs Provided</i>	29.10	31.30	31.30	107.6%	107.6%	100.0%
015101 Generation of agricultural technologies	1.90	2.10	2.10	110.6%	110.6%	100.0%
015102 Research extension interface promoted and strengthened	0.52	0.55	0.55	106.2%	106.2%	100.0%
015103 Internal Audit	0.06	0.06	0.06	100.1%	100.1%	100.0%
015104 Agricultural research capacity strengthened	24.07	25.87	25.87	107.5%	107.5%	100.0%
015105 Generation of technologies for priority commodities	2.55	2.72	2.72	106.7%	106.7%	100.0%
<i>Class: Outputs Funded</i>	1.56	1.56	1.56	100.0%	100.0%	100.0%
015151 Payments to International Organisations (CGIAR, ASARECA, WARDA)	1.56	1.56	1.56	100.0%	100.0%	100.0%
<i>Class: Capital Purchases</i>	3.43	0.86	0.86	25.0%	25.0%	100.0%

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QUARTER 4: Highlights of Vote Performance

Billion Uganda Shillings	Approved Budget	Released	Spent	% GoU Budget Released	% GoU Budget Spent	% GoU Releases Spent
015172 Government Buildings and Administrative Infrastructure	1.00	0.25	0.25	25.0%	25.0%	100.0%
015176 Purchase of Office and ICT Equipment, including Software	0.50	0.13	0.13	25.0%	25.0%	100.0%
015177 Purchase of Specialised Machinery & Equipment	1.08	0.27	0.27	25.0%	25.0%	100.0%
015178 Purchase of Office and Residential Furniture and Fittings	0.85	0.21	0.21	25.0%	25.0%	100.0%
Total For Vote	34.09	33.72	33.72	98.9%	98.9%	100.0%

* Excluding Taxes and Arrears

Table V3.2: 2012/13 GoU Expenditure by Item

Billion Uganda Shillings	Approved Budget	Releases	Expend-iture	% Budget Released	% Budget Spent	% Releases Spent
Output Class: Outputs Provided	29.10	31.30	31.30	107.6%	107.6%	100.0%
211102 Contract Staff Salaries (Incl. Casuals, Temporary)	15.59	18.04	18.04	115.8%	115.8%	100.0%
211103 Allowances	0.14	0.11	0.11	79.1%	79.1%	100.0%
212201 Social Security Contributions	2.07	2.26	2.60	109.1%	125.4%	115.0%
213001 Medical Expenses(To Employees)	0.10	0.10	0.08	100.0%	75.0%	75.0%
213002 Incapacity, death benefits and funeral expenses	0.58	0.46	0.34	78.2%	58.8%	75.2%
213004 Gratuity Payments	1.13	1.73	1.53	153.6%	135.9%	88.4%
221001 Advertising and Public Relations	0.05	0.03	0.03	59.4%	59.4%	100.0%
221002 Workshops and Seminars	0.12	0.23	0.23	183.4%	183.4%	100.0%
221003 Staff Training	0.52	0.24	0.24	45.9%	45.9%	100.0%
221004 Recruitment Expenses	0.10	0.11	0.11	109.8%	109.8%	100.0%
221005 Hire of Venue (chairs, projector etc)	0.11	0.12	0.12	109.0%	109.0%	100.0%
221006 Commissions and Related Charges	0.38	0.38	0.38	102.2%	102.2%	100.0%
221007 Books, Periodicals and Newspapers	0.09	0.08	0.08	86.4%	86.4%	100.0%
221008 Computer Supplies and IT Services	0.20	0.08	0.08	40.8%	40.8%	100.0%
221009 Welfare and Entertainment	0.17	0.14	0.14	83.8%	83.8%	100.0%
221011 Printing, Stationery, Photocopying and Binding	0.19	0.19	0.19	104.2%	104.2%	100.0%
221012 Small Office Equipment	0.09	0.02	0.02	24.6%	24.6%	100.0%
221014 Bank Charges and other Bank related costs	0.00	0.01	0.01	N/A	N/A	100.0%
221016 IFMS Recurrent Costs	0.12	0.12	0.12	101.1%	101.1%	100.0%
221017 Subscriptions	0.00	0.00	0.00	25.0%	25.0%	100.0%
222001 Telecommunications	0.11	0.11	0.11	99.5%	99.5%	100.0%
222002 Postage and Courier	0.03	0.04	0.04	154.7%	154.7%	100.0%
222003 Information and Communications Technology	0.14	0.04	0.04	29.9%	29.9%	100.0%
223004 Guard and Security services	0.11	0.12	0.12	105.8%	105.8%	100.0%
223005 Electricity	0.30	0.32	0.32	108.2%	108.2%	100.0%
223006 Water	0.03	0.03	0.03	97.0%	97.0%	100.0%
223901 Rent (Produced Assets) to other govt. Units	0.02	0.02	0.02	71.8%	71.8%	100.0%
224001 Medical and Agricultural supplies	2.63	2.81	2.81	106.5%	106.5%	100.0%
224002 General Supply of Goods and Services	0.80	0.91	0.91	113.7%	113.7%	100.0%
225001 Consultancy Services- Short-term	0.08	0.06	0.06	79.3%	79.3%	100.0%
226001 Insurances	0.51	0.16	0.16	31.7%	31.7%	100.0%
227001 Travel Inland	0.73	0.70	0.70	96.4%	96.4%	100.0%
227002 Travel Abroad	0.04	0.07	0.07	190.0%	190.0%	100.0%
227004 Fuel, Lubricants and Oils	0.54	0.66	0.66	122.5%	122.5%	100.0%
228001 Maintenance - Civil	0.64	0.19	0.19	29.9%	29.9%	100.0%
228002 Maintenance - Vehicles	0.48	0.53	0.53	111.6%	111.6%	100.0%
228003 Maintenance Machinery, Equipment and Furniture	0.12	0.05	0.05	44.6%	44.6%	100.0%
228004 Maintenance Other	0.05	0.01	0.01	24.5%	24.5%	100.0%
Output Class: Outputs Funded	1.56	1.56	1.56	100.0%	100.0%	100.0%

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QUARTER 4: Highlights of Vote Performance

<i>Billion Uganda Shillings</i>	Approved Budget	Releases	Expenditure	% Budget Released	% Budget Spent	% Releases Spent
262101 Contributions to International Organisations (Curre	1.55	1.55	1.55	100.0%	100.0%	100.0%
264101 Contributions to Autonomous Inst.	0.01	0.01	0.01	100.0%	100.0%	100.0%
Output Class: Capital Purchases	20.80	2.46	2.46	11.8%	11.8%	100.0%
231001 Non-Residential Buildings	1.00	0.25	0.25	25.0%	25.0%	100.0%
231005 Machinery and Equipment	1.58	0.40	0.40	25.0%	25.0%	100.0%
231006 Furniture and Fixtures	0.85	0.21	0.21	25.0%	25.0%	100.0%
312206 Gross Tax	17.37	1.60	1.60	9.2%	9.2%	100.0%
Grand Total:	51.46	35.32	35.32	68.6%	68.6%	100.0%
Total Excluding Taxes and Arrears:	34.09	33.72	33.72	98.9%	98.9%	100.0%

Table V3.3: GoU Releases and Expenditure by Project and Programme*

<i>Billion Uganda Shillings</i>	Approved Budget	Released	Spent	% GoU Budget Released	% GoU Budget Spent	% GoU Releases Spent
VF:0151 Agricultural Research	34.09	33.72	33.72	98.9%	98.9%	100.0%
<i>Recurrent Programmes</i>						
01 Headquarters	21.08	24.00	24.00	113.9%	113.9%	100.0%
07 National Crops Research	0.62	0.57	0.57	92.3%	92.3%	100.0%
08 National Fisheries Research	0.31	0.31	0.31	99.3%	99.3%	100.0%
09 National Forestry Research	0.20	0.22	0.22	107.3%	107.3%	100.0%
10 National Livestock Research	0.30	0.30	0.30	102.3%	102.3%	100.0%
11 National Semi arid Research	0.29	0.28	0.28	98.3%	98.3%	100.0%
12 National Laboratories Research	0.69	0.69	0.69	99.5%	99.5%	100.0%
13 Abi ZARDI	0.11	0.10	0.10	94.7%	94.7%	100.0%
14 Bulindi ZARDI	0.10	0.11	0.11	115.6%	115.6%	100.0%
15 Kacwekano	0.12	0.12	0.12	99.5%	99.5%	100.0%
16 Mukono ZARDI	0.13	0.12	0.12	95.9%	95.9%	100.0%
17 Ngetta ZARDI	0.13	0.13	0.13	98.7%	98.7%	100.0%
18 Nabium ZARDI	0.10	0.14	0.14	135.3%	135.3%	100.0%
19 Mbarara ZARDI	0.10	0.11	0.11	116.8%	116.8%	100.0%
20 Buginyaya ZARDI	0.17	0.18	0.18	106.2%	106.2%	100.0%
21 Rwebitaba ZARDI	0.05	0.06	0.06	123.2%	123.2%	100.0%
26 NARO Internal Audit	0.06	0.06	0.06	100.1%	100.1%	100.0%
<i>Development Projects</i>						
0382 Support for NARO	9.55	6.21	6.21	65.1%	65.1%	100.0%
Total For Vote	34.09	33.72	33.72	98.9%	98.9%	100.0%

* Excluding Taxes and Arrears

Table V3.4: Donor Releases and Expenditure by Project and Programme*

<i>Billion Uganda Shillings</i>	Approved Budget	Released	Spent	% GoU Budget Released	% GoU Budget Spent	% GoU Releases Spent
VF:0151 Agricultural Research	48.99	38.55	29.47	78.7%	60.2%	76.5%
<i>Development Projects</i>						
1138 EAAPP	18.99	14.83	10.45	78.1%	55.0%	70.4%
1139 ATAAS (Grant) EU, WB and DANIDA Funded	30.00	23.72	19.03	79.1%	63.4%	80.2%
Total For Vote	48.99	38.55	29.47	78.7%	60.2%	76.5%

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 01 Headquarters

Outputs Funded

Output: 01 51 51 Payments to International Organisations (CGIAR, ASARECA, WARDA)

Annual Planned Outputs:	Item	Spent
quarterly GOU subscriptions transferred to international organisations (ASARECA, CGIAR, etc)	262101 Contributions to International Organisations (Current)	650,000
	264101 Contributions to Autonomous Inst.	5,000

Cumulative Outputs Achieved by the end of the Quarter:

Payment to CGIAR made.

Reasons for Variation in performance

NA

Total	655,000
Wage Recurrent	0
Non Wage Recurrent	655,000
NTR	0

Outputs Provided

Output: 01 51 01 Generation of agricultural technologies

Annual Planned Outputs:	Item	Spent
1. Competitive research agenda developed;	211103 Allowances	13,506
2. Competitive research projects processed and implemented	221011 Printing, Stationery, Photocopying and Binding	37,115
3. Quality management system established	222001 Telecommunications	12,580
6- UJAS production operationalised	223005 Electricity	10,300
7 - Office equipment for UJAS Secretariat acquired	223006 Water	2,300
8- UJAS Journal Publicised and popularised	224002 General Supply of Goods and Services	338,951
9 - At least 3 UJAS Editorial Board meetings held	227004 Fuel, Lubricants and Oils	59,846
10 - At least 3 UJAS Editorial Board meetings held		
11- UJAS Secretarial work done		
12- UJAS Miscellaneous expenditures paid.		

2.NARO Scientific Conference held;

3.Annual planning and Review meeting held`

4.Quarterly planning and Review meetings conducted

5.Conduct monitoring and evaluation of research.

Updated research priorities and agenda incorporating emerging & crosscutting issues developed and implemented.

Demand -driven, market -responsive and client oriented research priority setting and process strengthens.

Core national and zonal strategic research programmes implemented.

Sufficient funds for agricultural research mobilised and disbursed.

Increased visibility , public acceptance & appreciation of NARO Lessons & experiences shared with different stakeholders.

Effective and good IPR Policy
Well equipped law library.

HR/ADMIN:

6.Water utility bills paid; Electricity utility bills paid; Telephone,

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	US\$ Thousand
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 01 Headquarters

Cumulative Outputs Achieved by the end of the Quarter:

Maintained 13 on going CGS projects

Q3

- Organised a CGS meeting to review and developed call profiles .

Q2

- 1 M and E missions was conducted in the Abi ZARDI.

- Organised the NARO Scientific conference.

- Organised KAFACI international workshop.

Q1

- Preparation for the NARO Scientific conference have been conducted;

- Annual research planning and review meeting in the PARIs have been held;

- 3 M and E missions have been conducted in the PARIs.

Reasons for Variation in performance

Insufficient funds

Total	474,598
<i>Wage Recurrent</i>	0
<i>Non Wage Recurrent</i>	474,598
<i>NTR</i>	0

Output: 01 5102 Research extension interface promoted and strengthened

Annual Planned Outputs:	Item	Spent
DG's office:	221002 Workshops and Seminars	28,786
	221008 Computer Supplies and IT Services	5,000
	227001 Travel Inland	98,870
Good governance and corporate social responsibility ensured and promoted.		
NARO's contribution towards national Agricultural Research .		
Networking, Partnership and collaboration stakeholders meetings held;		
Stakeholders sensitisation workshops/meetings of conducted;		

- 1.NARO-NAADS Joint workshops and meetings conducted;
- 2.Stakeholders trained in IAR4D
- 3.Joint stakeholder Planning/Review/Feedback/ workshops and meetings held;
- 4.membership to local Associations made and update
- 5.Networking, Partnership and collaboration stakeholders meetings held;
- 6.stakeholders sensitisation workshops/meetings of conducted;
- 7.Participate in open days/Farmer field schools/exhibitions/trade fairs/Agricultural show/Field days;
- 8.Extension and promotional materials developed and disseminated

Cumulative Outputs Achieved by the end of the Quarter:

Jinja agricultural show and exhibition organised.

Q3

Held a meeting of the User committee -NARO council.

Q2

- Organised the World food day celebrations in Mbarara ZARDI.

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	<i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 01 Headquarters

Q1

- 2 NARO-NAADS joint M and E meeting on conducted;
- Participated in preparations for the Jinja Agricultural show;
- Extension and promotional materials developed and ready for printing and dissemination

- Improved quality of agricultural research service provision.

Reasons for Variation in performance

Insufficient funds to execute all planned activities

Total	132,656
<i>Wage Recurrent</i>	<i>0</i>
<i>Non Wage Recurrent</i>	<i>132,656</i>
<i>NTR</i>	<i>0</i>

Output: 01 5104 Agricultural research capacity strengthened

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
HR:	211102 Contract Staff Salaries (Incl. Casuals, Temporary)	17,854,289
1. Staff Salaries and other contract salaries paid	212201 Social Security Contributions	2,596,281
2. Good Governance and corporate social responsibility ensured and promoted; Leadership and oversight Management of agricultural research provided;	213001 Medical Expenses (To Employees)	75,000
3. Staff recruited and trained	213002 Incapacity, death benefits and funeral expenses	340,680
4. Stationery and office consumables procured;	213004 Gratuity Payments	1,529,387
5. Office equipment maintained;	221003 Staff Training	16,900
Postage and courier services used;	221004 Recruitment Expenses	25,000
7. Vehicles serviced; Office buildings maintained; Compound maintained;	221005 Hire of Venue (chairs, projector etc)	4,893
8. Maintain effective ICT facilities and Subscription for internet paid;	221006 Commissions and Related Charges	40,340
	221007 Books, Periodicals and Newspapers	8,767
10. Acquisition of books, agric. Information magazines and newspapers;	221008 Computer Supplies and IT Services	5,023
11. security maintained	221009 Welfare and Entertainment	13,368
12. Break tea and Refreshments provided ;	221012 Small Office Equipment	5,207
9. Facilitate Technical meetings (Heads of Units) and other stakeholder workshops.	221016 IFMS Recurrent Costs	65,650
Research implementation at institutes guided.	222002 Postage and Courier	1,340
Well motivated staff retained in the organization.	222003 Information and Communications Technology	5,300
Improvement in performance management and recruitment skills.	223004 Guard and Security services	13,030
70 positions filled by December 31, 2012.	224002 General Supply of Goods and Services	2,299
Organizational objectives achieved and individual tasks accomplished.	226001 Insurances	82,750
Staff motivated	228002 Maintenance - Vehicles	57,104
A safe environment provided for NARO assets.	228004 Maintenance Other	1,313
Staff Development and training.		

PROCUREMENT:

Proper procurement documents prepared and efficient

HR:

supervision of works.

ICT facilities and Subscription for internet paid;

11. security maintained

12. Break tea and Refreshments provided ;

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs <i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 01 Headquarters

9. Facilitate Technical meetings (Heads of Units) and other stakeholder workshops;

ACCOUTS:

1) Computerised Financial Information, under "Solomon" accounting Package-Micro-soft Dynamics SL

Quarterly entity accounts, financial statements, commitment control reports, several manual books of accounts maintained.

Periodical Financial Budgets

NARO- "IFMS"

Capacity Development

Annual financial audit

Fulfilment of Banking obligations

Government Taxes

WorldBank Financial Reports.

PR:

Backstop research institutes in areas of Public Relations & Development

Communication as well as branding concepts;

13. Participate in Agricultural exhibitions, trade fairs, shows and Open days;

14. Undertake Corporate Marketing and Promotional activities;

15. Agricultural research finding published (both hard and soft);

16. Facilitate the approval and registration of all non-PARI research service providers;

17. Participate in donor dialogues meeting.

Improved quality of agricultural research service provision.

Sufficient funds for agricultural research mobilised and disbursed.

Increased visibility, public acceptance & appreciation of NARO

Lessons & experiences shared with different stakeholders.

Effective and good IPR Policy

Well equipped law library

Knowledge of all legal problems affecting the institutes

An effective legally recognized logo.

ICT:

1. 30% staff at NARO are trained in ICDL to ensure efficient use of ICT equipment.

2. ICT technical staff certify in appropriate ICT technical & ICT support courses (ITIL, BCP, SAN CISCO, ORACLE, & Microsoft)

Cumulative Outputs Achieved by the end of the Quarter:

- Staff salaries paid for the months April-June 2013 paid.

- Utility bills paid

- Assortment of office equipment service and maintained

- An assortment of office stationary and consumable procured

Reasons for Variation in performance

Insufficient funds

Total 22,743,919

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	US\$ Thousand
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 01 Headquarters

Wage Recurrent	17,854,289
Non Wage Recurrent	4,887,331
NTR	2,299

Programme 07 National Crops Research

Outputs Provided

Output: 01 5101 Generation of agricultural technologies

Annual Planned Outputs:	Item	Spent
1. Uninterrupted & Constant Supply of Electricity and water	211103 Allowances	12,000
2. Activities at different sites carried out according to plan	221002 Workshops and Seminars	12,458
3. Effective running operational activities	221011 Printing, Stationery, Photocopying and Binding	46,020
4. Functional Generators in working condition	222001 Telecommunications	7,200
5. Various types of reports produced for effective management on a day - day basis	223005 Electricity	81,000
6. 4 Staff trained through short courses & Workshops in Finance, Audit Administration, Procurement)	227004 Fuel, Lubricants and Oils	106,012
7. 5 Staff trained in various areas of Administration, Finance, Procurement, Audit & Science		
8. Required inputs made available for experiment and trials		

Cumulative Outputs Achieved by the end of the Quarter:

Horticulture

- Two pest and disease epidemiology surveys were conducted in 3 more districts (in Rakai, Masaka and Wakiso).

- 3 on-farm trials on disease severities and yield losses established in Wakiso district

Sweet potato

- 1 Planted seedling nursery, PYT (35 entries), AYT (17 entries), AYT (24 entries), AYTOFSP (14 entries) trials at NaCRRI, NaSARRI and NgeZARDI.

Q3

Horticulture

- Two pest and disease epidemiology surveys were conducted in 6 districts of Uganda ; Data entry and analysis are ongoing

- Studies on social economic impacts of diseases and pests of horticultural crops; Data has been collected and partly analyzed

Fruit trees

- Production of fruit tree seedlings: 7000 scions sourced and grafted.

About 2000 additional scions being sourced to complete the grafting

- Maintenance of the office and laboratory environment

- Uninterrupted & Constant Supply of Electricity and water

- Service maintenance of the generators

- Purchase herbicides and fungicides

Q2

- Maintenance of fences for field trial plots, including weeding, application of herbicides and fertilisers);

- Maintenance of multiplication sites for breeder seed and improved planting materials. (weeding, pruning and application of herbicides)

Q1

- Maintenance of field trial plots;

- Maintenance of multiplication sites for breeder seed and improved planting materials.

- Maintenance of on-farm trials selected commodities.

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	US\$ Thousand
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 07 National Crops Research

Reasons for Variation in performance

Insufficient and delayed release of funds.

Total	264,690
Wage Recurrent	0
Non Wage Recurrent	264,690
NTR	0

Output: 01 5104 Agricultural research capacity strengthened

Annual Planned Outputs:	Item	Spent
NaCRRI and COREC	221003 Staff Training	13,800
	221006 Commissions and Related Charges	24,031
	221008 Computer Supplies and IT Services	11,651
1. Well maintained compounds and roads for a good working environment	221009 Welfare and Entertainment	6,555
2. Staff Recruited in finance and audit units	221012 Small Office Equipment	2,358
3. Establishment of Policy guidelines, recommendations & review	222002 Postage and Courier	210
4. Representation/Attendance of Official Meetings	223004 Guard and Security services	11,581
5. Activities in 8 Trial sites in COREC Bugusege & Kiige are carried according to Plan	224002 General Supply of Goods and Services	91,404
6. Constant /Uninterrupted Flow of Communication	226001 Insurances	500
7. Well maintained and functional information processing system	227001 Travel Inland	11,520
8. A well maintained and functional telephone network for NaCRRI	227004 Fuel, Lubricants and Oils	12,800
9. A well motivated staff to ensure efficient and effective performance	228001 Maintenance - Civil	30,908
10. A well motivated staff with working tools to ensure efficient and effective performance	228002 Maintenance - Vehicles	83,617
11. Institute Assets protected from thieves & Vandalisation	228003 Maintenance Machinery, Equipment and Furniture	31,000
12. At least 80% of NaCRRI vehicle are functional to ensure easy transported and activities		
13. All parts of NaCRRI is accessible and have sanitation facility		
14. Institute Assets protected from thieves & Vandalisation		
15. Office buildings maintained to provide good working condition		

Cumulative Outputs Achieved by the end of the Quarter:

- April-June 2013 utility bills paid for Namulonge and Kituza stations;
- Assortment of stationery and office consumables procured;
- Serviced an assortment of office equipment and institute vehicles
- research plots, compound and roads maintained;

- January-March 2013 utility bills paid for Namulonge and Kituza;
- Assortment of stationery and office consumables procured;
- Servicing of 1 office photocopier and 2 printers

Q2

- October-December 2012 utility bills paid for Namulonge and Kituza;
- Assortment of stationery and office consumables procured;
- Office equipment maintained;

Subscription for internet paid and newspapers;

- Break tea and Refreshments provided ;
- compound and roads maintained;

Q1

- Utility bills paid for Namulonge and Kituza;
- Stationery and office consumables procured;
- Office equipment maintained;
- Postage and courier services used;
- Vehicles serviced; Office buildings maintained; Compound maintained;

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	US\$ Thousand
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 07 National Crops Research

Reasons for Variation in performance

Insufficient funds and delayed release of funds

Total	331,934
<i>Wage Recurrent</i>	0
<i>Non Wage Recurrent</i>	170,550
<i>NTR</i>	161,384

Output: 01 5105 Generation of technologies for priority commodities

Annual Planned Outputs:	Item	Spent
Released and near release bean varieties produced and maintained, Stress tolerant / resistant bean genotypes identified and incidence & severity of major bean pests & diseases determined Stress tolerant maize varieties released, released maize varieties purified, pests & diseases yield loss determined Cassava lines resistant to stress with desirable attributes released, Virus disease maps generated, Early warning systems developed, nutrient-use-efficiencies of elite cassava genotypes determined Stress tolerant rice varieties released, released rice varieties purified, pests & diseases yield loss determined & performance of new upland and rain fed low land rice lines determined Coffee varieties with high yields, resistant to stress developed, Technologies for control of pests and diseases developed and Effective soil fertility and water management options developed Information on best agronomic practices generated and availed, Extent of pest infestation in tea growing areas determined & management options of major pests developed Effective soil fertility and water management options for new varieties and non-traditional areas developed	224001 Medical and Agricultural supplies	134,061

Cumulative Outputs Achieved by the end of the Quarter:

- 2 tons of rice breeder seed produced
- 0.1 tones of beans breeder seed produced
- 2. Five (5) acres established for bean breeder seed production and 89 farmer groups organised to produce foundation/ quality declared seed.
- Raised 5,955 (2,815 cuttings and 3140 cuttings) which were distributed to 17 nursery operators

Q3

Coffee

- Five elite clones were selected
- 100 coffee plants raised for on-farm trials
- Cup quality profiles of sample coffee varieties from 40 locations were done
- The yield of 243 genotypes and 29 hybrid progenies was determined
- Selected 17 elite hybrid clones and raised 146 plants of the selected individuals for replicated trials
- Multiplication of elite Arabica and Robusta coffee clones: Improved tissue culture protocols for multiplying variety KR4; improved protocols for weaning tissue culture generated plants
- Database of black coffee twig borers (BCTB) spread and impact, and distribution map generated
- Efficacy of at least 3 control techniques for coffee diseases management determined on-station: Preliminary results showed that: Orius and Copper oxychloride controlled CLR by 99.7% and 93.2% respectively; Nordox and Kocide controlled CBD by 98.9% and 98.7% respectively; Incidence of CLR was highest in Paidha (90%), followed

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs <i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 07 National Crops Research

by Sironko (67%) and least in Kapchorwa (20%) district; Incidence of CBD was highest in Kapchorwa (6%), followed by Paidha (2%) and not observed in Sironko

Q2

Tea

-The major diseases found in Kanungu were *Armillaria mellea* and *Xylaria*

cassava

Coffee

- Comprehensive national surveys for spread and impact covered Bunyoro sub-region. Manuscript for spread and impact studies submitted for publication in a refereed journal.

- Monthly data collection on community-based participatory approaches implemented in Mukono and Nakaseke districts comparing phyto-sanitary farms with non-phyto-sanitary ones was done and undergoing analysis.

- Running cultures of entomo-pathogens *B. bassiana* and *M. anisopliae* established in the laboratory at Kituza

Maize

- Yield potential for 3 maize (Longe 4, 5 and MM3) and elite sorghum varieties (E1-E11) were established under 3 different spacing and no nutrient supplement and rain fed conditions in West Nile zone

Beans

- Bush varieties Nabe 3, Nabe 5, K131, Nabe 2 and Nabe 1 yielded 2.7t, 2.52t, 2.4t, 2.3t and 2.3t and 2.1t and 2.0t/ha compared to local varieties Kamwanyi 0.7t and Bulangiti 0.4t respectively

Reasons for Variation in performance

delayed release of funds

Total	134,061
<i>Wage Recurrent</i>	0
<i>Non Wage Recurrent</i>	134,061
<i>NTR</i>	0

Programme 08 National Fisheries Research

Outputs Provided

Output: 01 5101 Generation of agricultural technologies

Annual Planned Outputs:	Item	Spent
Technology/knowledge/ information generated for at least one core research study	211103 Allowances	9,360
	221002 Workshops and Seminars	7,364
	221011 Printing, Stationery, Photocopying and Binding	6,760
Knowledge and information on Aquatic Biodiversity disseminated to students in mid secondary level.	222001 Telecommunications	7,200
	223005 Electricity	32,224
Office and stationery supplies procured.	223006 Water	11,011
	227004 Fuel, Lubricants and Oils	19,598
Enhanced research through improved networking capacity.		
Smooth running of research activities.		
Smooth running of research activities.		

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	<i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 08 National Fisheries Research

Technology/knowledge/ information generated for at least one core research study.

Back to office and Feedback reports.

Cumulative Outputs Achieved by the end of the Quarter:

Q3

A technical report with results from trawl and hydroacoustic data collected from Lake Victoria was compiled. It indicates a significant decline in Nile perch stocks from 1.2 mt for the period 1999-2007 to 0.8 mt currently. Mukene has increased from 0.4 mt to 1 mt over the same period. Haplochromines too have increased from 0.3 mt to 0.6 mt. Management strategies that will enhance recovery of the Nile perch stocks while maintaining that of the other fish species should be followed. Gazzeting fish breeding and nursery grounds for protection is another available option.

Q2

One reconnaissance surveys were conducted in the inshore waters of the Ugandan part of Lake Victoria and geo-referenced data was captured for 157 grounds identified as potential fish breeding/nursery grounds.

Q1

- Marine facilities, buildings maintained;

Reasons for Variation in performance

Late release of funds

Total	93,517
<i>Wage Recurrent</i>	<i>0</i>
<i>Non Wage Recurrent</i>	<i>93,517</i>
<i>NTR</i>	<i>0</i>

Output: 01 51 02 Research extension interface promoted and strengthened

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
Improved awareness in ways of increasing fish production.	221007 Books, Periodicals and Newspapers	6,005
Capacity for producing dissemination outreach materials using ICT facilities.	221008 Computer Supplies and IT Services	3,800
	227001 Travel Inland	7,613

Coordinated research managemnt

Cumulative Outputs Achieved by the end of the Quarter:

Assortment of office consumables

500 additional NAFIRRI brochures printed

Q2

1000 NAFIRRI brochures printed

Q1

Management meeting held

Reasons for Variation in performance

The funds released were inadquate

Total	17,418
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Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	<i>US\$ Thousand</i>
Vote Function: 0151 Agricultural Research		
<i>Recurrent Programmes</i>		
Programme 08 National Fisheries Research		
	<i>Wage Recurrent</i>	0
	<i>Non Wage Recurrent</i>	17,418
	<i>NTR</i>	0

Output: 01 5104 Agricultural research capacity strengthened

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
Smooth running of research activities and management.	211102 Contract Staff Salaries (Incl. Casuals, Temporary)	46,080
Public awareness of institute research programmes.	221003 Staff Training	14,200
Skilled manpower.	221004 Recruitment Expenses	6,400
Staff recruited into identified vacant positions.	221006 Commissions and Related Charges	20,026
Smooth research implementation and management.	221008 Computer Supplies and IT Services	1,426
ICT capacity strengthened for effective delivery of research outputs.	221009 Welfare and Entertainment	3,095
Enhanced team work and motivation.	221012 Small Office Equipment	890
Smooth office operations.	222002 Postage and Courier	525
Enhanced research through improved networking capacity.	223004 Guard and Security services	32,515
Security to Institute premises and property.	223005 Electricity	26,400
Technical assistance/advice to support research.	223006 Water	26,400
Annual insurance cover for institute property e.g. vehicles.	224002 General Supply of Goods and Services	46,383
Back to office and Feedback reports.	225001 Consultancy Services- Short-term	600
institute building and infrastructure maintained.	226001 Insurances	225
Operational institute vehicles.	228001 Maintenance - Civil	35,928
Operational institute Machinery and equipment.	228002 Maintenance - Vehicles	29,045
Operational other institute property not mentioned above	228003 Maintenance Machinery, Equipment and Furniture	2,347
Compound and ponds maintained	228004 Maintenance Other	1,094
Three Institute guest houses provided with electricity		
Three Institute guest houses provided with running water		
Protection of Institute premises and property strengthened		
Well maintained Institute tractor		
Regular civil maintenance of institute buildings and infrastructure		
Well maintained Institute lorry		
Regular civil maintenance of institute building and infrastructure		
Well maintained Institute boats		
Maintenance of Three NTR bank accounts.		
Administrative travels to the Secretariate and other areas of operations facilitated		

Cumulative Outputs Achieved by the end of the Quarter:

- April-June 2013 utility bills paid for Jinja and Kajansi stations
- 3 Vehicles serviced.
- internet subscription paid for Kajansi and Jinja stations.
- Office buildings maintained; - Compound maintained;

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs <i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 08 National Fisheries Research

- Maintain effective ICT facilities and Subscription for internet paid in Jinja and Kajjansi;
- Assortment of office stationery and consumables procured;
- Assortment of office equipment maintained;
- Acquisition of books, agric. Information magazines and newspapers;
- security maintained
- Break tea and Refreshments provided ;
- one contracts committee meeting held

Q3

- January-March 2013 utility bills paid for Jinja and Kajansi stations
- 3 Vehicles serviced.
- internet subscription paid for Kajansi and Jinja stations.

Q2

- October-December 2012 utility bills paid for Jinja and Kajansi stations
- 3 Vehicles repaired.
- Directors supervision travels facilitated.
- October-December 2012 internet subscription paid.

Q1

- Office buildings maintained; - Compound maintained;
- Maintain effective ICT facilities and Subscription for internet paid in Jinja and Kajjansi;
- Stationery and office consumables procured;
- Office equipment maintained;
- Postage and courier services used;
- Vehicles serviced;
- Acquisition of books, agric. Information magazines and newspapers;
- security maintained
- Break tea and Refreshments provided ;
- one contracts committee meeting held
- ICT facilities and Subscription for internet paid.

Q1

Reasons for Variation in performance

Delayed release and access to funds

Total	293,578
<i>Wage Recurrent</i>	19,200
<i>Non Wage Recurrent</i>	102,233
<i>NTR</i>	172,146

Output: 01 51 05 Generation of technologies for priority commodities

Annual Planned Outputs:	Item	Spent
Fish diversity, Reproductive Ecology and Improvement of Genetics and Culture Practices of Commercial value fishes	224001 Medical and Agricultural supplies	78,731

Cumulative Outputs Achieved by the end of the Quarter:

- Geo-referenced map and database on trends and impacts (profitability and constraints) if fish farming to livelihoods in Central Uganda were generated for 90% (820 fish farmers). The output allows fish farmers and government to enhance profitability while intervention is moved to other regions.
- The Central and Eastern parts of Lake Victoria were surveyed to

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs
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US\$ Thousand

Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 08 National Fisheries Research

identify suitable cage culture sites out of which, 17 bays were investigated, from which, 10 sites were physico-chemically characterized, with six found suitable for cage culture and Low Volume High Density (2x2x2 to 5x5x2.5m) cage operations, and four (>5x5x5m cages) for bigger operations which can be started following permit (i.e NEMA, DFR, DWD) applications

Q3

19) A technical report with results from trawl and hydroacoustic data collected from Lake Victoria was compiled. It indicates a significant decline in Nile perch stocks from 1.2 mt for the period 1999-2007 to 0.8 mt currently. Mukene has increased from 0.4 mt to 1 mt over the same period. Haplochromines too have increased from 0.3 mt to 0.6 mt. Management strategies that will enhance recovery of the Nile perch stocks while maintaining that of the other fish species should be followed. Gazetting fish breeding and nursery grounds for protection is another available option.

Q2

- Three reconnaissance surveys were conducted in the inshore waters of the Ugandan part of Lake Victoria and geo-referenced data was captured for 157 grounds identified as potential fish breeding/nursery grounds.

- Draft map outputs produced for the locations of fish breeding/nursery grounds in Lake Victoria.

Q1

Aquaculture structures and compound maintained (2000m³ earthen pond prepared for happa fry nursing & broodstock holding).

Reasons for Variation in performance

Late release of funds

Total	78,731
<i>Wage Recurrent</i>	<i>0</i>
<i>Non Wage Recurrent</i>	<i>78,731</i>
<i>NTR</i>	<i>0</i>

Programme 09 National Forestry Research

Outputs Provided

Output: 01 5101 Generation of agricultural technologies

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
1.Improved management of On-station experiments and Kifu research forest.	211103 Allowances	27,450
2.NaFORRI Kifu Forest Management plan developed	221011 Printing, Stationery, Photocopying and Binding	12,000
3.Quality of research and research output enhanced	222001 Telecommunications	7,000
4.Regional and international partnership enhanced	223005 Electricity	18,000
5.Sawmill & carpentry workshop equipment maintained	224001 Medical and Agricultural supplies	31,247
6.Uninterrupted access to electricity, telephone and water services	224002 General Supply of Goods and Services	71,092
7.NaFORRI physical facilities maintained, Assets secured and Kifu forest managed	227004 Fuel, Lubricants and Oils	16,828

Cumulative Outputs Achieved by the end of the Quarter:

- Tree Growth data (dbh, height, form) for *Pinus caribaea* var. *hondurensis* collected in Mubende, Kiboga and Nakasongola districts of Central Uganda. Preliminary analysis shows a Basal Area of 10.74m²/ha, Standing volume of 36.82m³/ha and a MAI of 7.36m³/ha/yr for PCH of 5 years.

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs
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US\$ Thousand

Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 09 National Forestry Research

- Database of 1826 plants for health, nutrition and incomes developed

Q3

- 10 priority agroforestry species identified in South-Eastern AEZ FOR THE Improvement of agroforestry tree species germplasm for enhancing on-farm productivity

- Developed and promoted of IPM technologies for plantation forestry pests and diseases in Uganda ; there was Average damage levels on *C. Cronortii* of 41%, 38% and 21% for Kiriima, Mafuga and Katugo respectively. *C. cronortii* population was highest IN MIDDLE, followed by lowest section. Least population observed in lower section

- Investment analysis of plantation forestry for improved profitability and livelihood analysis showed a Basal Area of 13.98m²/ha, Standing volume of 44.5m³/ha and a MAI of 8.9m³/ha/yr for PCH of 5 years.

- 300 scions collected from elite mango mother garden in Kimenyedde and grafted 1 kg of *Grevillea robusta* seed sowed and 1500 orange rootstocks budded to Scale out NaFORRI technologies.

Q2

- In diagnostic surveys of key diseases of pine and eucalyptus tree species Bacterial blight, *Mycosphaerella* leaf spot, Powdery mildew, *Botryosphaeria* cankers, and dumping off were identified in eucalyptus nurseries, whereas Pine wilts, *Fusarium* wilt, *Armillaria*, *Alternaria* and root rot diseases were identified in eucalyptus nurseries.

Q1

- Maintenance of on station trees and plantation

Reasons for Variation in performance

Insufficient funds to execute all planned activities.

Total	183,617
<i>Wage Recurrent</i>	0
<i>Non Wage Recurrent</i>	183,617
<i>NTR</i>	0

Output: 01 51 04 Agricultural research capacity strengthened

Annual Planned Outputs:	Item	Spent
1.NaFORRI's capacity for effective information management and communication enhanced	221007 Books, Periodicals and Newspapers	280
2.Generation of NTR improved	221009 Welfare and Entertainment	15,000
3.Management enhanced and Performance of staff improved	221012 Small Office Equipment	1,000
4.Vehicles for activities maintained.	221017 Subscriptions	725
5.Fuel, Lubricants and oils procured	223004 Guard and Security services	14,332
	224002 General Supply of Goods and Services	22,035
	228001 Maintenance - Civil	3,452
	228003 Maintenance Machinery, Equipment and Furniture	500
Cumulative Outputs Achieved by the end of the Quarter:		
- An assortment of office stationery and office consumables procured;		
- An assortment of office, lab and filed equipment serviced;		
- Postage and courier services used;		
- 5 vehicles serviced;		
- Office buildings maintained; Compound maintained;		
- ICT facilities serviced and subscription for internet April-June 2013 and corporate anti virus 2013 paid;		
- Acquisition of books, agric. Information magazines and newspapers;		

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	<i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 09 National Forestry Research

- security maintained
- Break tea and Refreshments provided

Q3

- Part payment for January-March 2013 utility bills paid
- Stationery and office consumables procured;

Q2

- Utility bills paid for October -December 2012.
- Stationery and office consumables procured;
- Office equipment maintained;
- Postage and courier services used;
- 2 Vehicles serviced;
- October -December 2012 subscription for internet paid;
- Acquisition of newspapers;
- security maintained
- Break tea and Refreshments provided ;

Q1

- Stationery and office consumables procured;
- Office equipment maintained;
- Postage and courier services used;
- Vehicles serviced; Office buildings maintained; Compound maintained;
- ICT facilities and Subscription for internet paid;
- Acquisition of books, agric. Information magazines and newspapers;
- security maintained
- Break tea and Refreshments provided ;

Reasons for Variation in performance

Delayed release of funds

Total	57,324
<i>Wage Recurrent</i>	<i>0</i>
<i>Non Wage Recurrent</i>	<i>35,289</i>
<i>NTR</i>	<i>22,035</i>

Programme 10 National Livestock Research

Outputs Provided

Output: 01 5101 Generation of agricultural technologies

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
Disease surveillance in border districts of Busia, Tororo, Manafwa, Bududa and Butaleja	221002 Workshops and Seminars	2,850
	221011 Printing, Stationery, Photocopying and Binding	11,456
<i>Cumulative Outputs Achieved by the end of the Quarter:</i>	222001 Telecommunications	7,200
- Maintained test animals (dary cattle, goats, bees, poultry, crocodiles) on station.	223005 Electricity	12,000
	223006 Water	4,500
<i>Reasons for Variation in performance</i>	224001 Medical and Agricultural supplies	27,700
Delayed release of funds	224002 General Supply of Goods and Services	3,632
	227004 Fuel, Lubricants and Oils	26,098
	Total	95,437
	<i>Wage Recurrent</i>	<i>0</i>
	<i>Non Wage Recurrent</i>	<i>95,437</i>
	<i>NTR</i>	<i>0</i>

Output: 01 5102 Research extension interface promoted and strengthened

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	<i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 10 National Livestock Research

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
NaLIRRI research activities and functions demystified	221001 Advertising and Public Relations	2,000
Cumulative Outputs Achieved by the end of the Quarter:		
Small assortment of office stationery and consumables		
Reasons for Variation in performance		
Insufficient funds available		
	Total	2,000
	<i>Wage Recurrent</i>	<i>0</i>
	<i>Non Wage Recurrent</i>	<i>2,000</i>
	<i>NTR</i>	<i>0</i>

Output: 01 5104 Agricultural research capacity strengthened

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
Renovated Staff houses and Institute Guest House	221003 Staff Training	21,000
	221006 Commissions and Related Charges	34,544
Cumulative Outputs Achieved by the end of the Quarter:		
- April-June 2013 office utility bills paid for Namulonge, Tororo and Serere.	221007 Books, Periodicals and Newspapers	1,095
- Assortment of office equipment serviced	221008 Computer Supplies and IT Services	4,525
- Assortment of office stationery and office consumables procured;-	221009 Welfare and Entertainment	4,170
Postage and courier services used;	224001 Medical and Agricultural supplies	700
- 5 Vehicles serviced;	224002 General Supply of Goods and Services	33,918
- Office, laboratory and farm buildings maintained; - Compound	227001 Travel Inland	640
maintained;	227004 Fuel, Lubricants and Oils	536
- April-June 2013 subscription for internet paid;	228001 Maintenance - Civil	9,003
- Acquisition of newspapers;	228002 Maintenance - Vehicles	39,457
- security maintained		
- Break tea and Refreshments provided ;		

Q3

- January-March 2013 office utility bills paid for Namulonge, Tororo and Serere.

Q2

- Office utility bills paid for Namulonge, Tororo and Serere.
 - Office printers and photocopiers serviced;
 - Assortment of office stationery and office consumables procured;-
 Postage and courier services used;
 - 2 Vehicles serviced;
 - Office buildings maintained; - Compound maintained;
 - October-December 2012 subscription for internet paid;
 - Acquisition of newspapers;
 - security maintained
 - Break tea and Refreshments provided ;

Q1

- Stationery and office consumables procured;
 - Office equipment maintained;
 - Postage and courier services used;
 - Vehicles serviced; Office buildings maintained; Compound
 maintained;
 - Maintain effective ICT facilities and Subscription for internet paid;

Reasons for Variation in performance

Delayed release of funds

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	<i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 10 National Livestock Research

Total	149,588
<i>Wage Recurrent</i>	<i>0</i>
<i>Non Wage Recurrent</i>	<i>110,146</i>
<i>NTR</i>	<i>39,442</i>

Output: 01 5105 Generation of technologies for priority commodities

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
Tse-tse fly and ticks management options, Forage management, Pest and disease management	224001 Medical and Agricultural supplies	94,488

Tse-tse fly and ticks management options, Forage management, Apiary, Livestock breeding and disease management

Cumulative Outputs Achieved by the end of the Quarter:

- Maintained test animals (dairy cattle, goats, bees, poultry, crocodiles) on station.
- Geo-referenced and collected observational data collected from 5 districts

Q3

- Maintained test animals (dairy cattle, goats, bees, poultry, crocodiles) on station.

Q2

- A decision support tool for optimizing forage utilization in smallholder dairy production systems was improved and was tested on 10 household farms ---an average increase (20%) in milk yield during the dry season due to availability of high quality feeds.
- Maintenance of on station 150 dairy test breeds/test animals in Serere, Tororo and Namulonge.

Q1

- Maintenance of on station dairy test breeds/test animals

Reasons for Variation in performance

Delayed release of funds

Total	94,488
<i>Wage Recurrent</i>	<i>0</i>
<i>Non Wage Recurrent</i>	<i>94,488</i>
<i>NTR</i>	<i>0</i>

Programme 11 National Semi arid Research

Outputs Provided

Output: 01 5101 Generation of agricultural technologies

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
Germplasm collected ,characterized and evaluated, variety maintenance, seed multiplication of priority crops (cotton.sorghum,finger millet, sun flower, sesame, groundnuts and cow peas).	221002 Workshops and Seminars	6,775
	221007 Books, Periodicals and Newspapers	2,500
	221011 Printing, Stationery, Photocopying and Binding	13,520
<i>Cumulative Outputs Achieved by the end of the Quarter:</i>	222001 Telecommunications	3,000
- Twelve lines planted out and data plant stand count, number of branches and days to 75% flowering collected. The germination was within 70 - 90%. Black gram gave the highest number of branches per plant (4.6) followed by local check (2.9). Regarding days to 75% flowering, VC6153B20 flowered early (34.6 days), followed by KPSI	223005 Electricity	3,129
	224001 Medical and Agricultural supplies	24,960
	224002 General Supply of Goods and Services	54,105
	227004 Fuel, Lubricants and Oils	21,120

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs
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US\$ Thousand

Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 11 National Semi arid Research

and Mauritius (35.3 days). While local check flowered last (45.6 days)

A total of 14 early maturing elite lines obtained from IITA were planted out at NaSARRI and data on stand count collected. The germination was within 70 - 80% .

- A total of 11 medium duration elite lines from IITA planted out and data on plant stand count. The germination was within 70 - 80% . A total of 11 dual purpose lines obtained from IITA were planted out at NaSARRI and data on plant stand count collected. The germination was within 70 - 80%.

Q3

- Preliminary results on cow pea lines showed that ACC 25, ACC2, NewT, ACC11 and ACC23 could be advanced for multi-location trials.

- 27 cow pea accessions from have been selected for preliminary yield trials.

- One experiment with a total of 21 different spacings established and maintained. Yield data collected and analyzed. Spacing of 60 x 20 cm gave the highest yield (1352 kg/ha), while the lowest yield was obtained from 75 x 70 cm spacing. Wider spacing generally reduced cowpea grain yield.

- Maintenance of cow pea demonstration plots;

Q2

- 18 cow pea entries are planted at 8 multilocation sites at NaSARRI; ZARDIs (Mbarara, Bulindi, Mukono, Ngetta, Abi); TVCs (Pader, Amuria, Nakabango) representing. Major groundnut agro-ecologies in Uganda. Selections are ongoing for yield, leafspots, rosette and confectionery traits. The plant stands at emergence were good at most sites except Kuju TVC. The crops are past 75% anthesis and we anticipate harvestings in late January/early February.

- Maintenance of sorghum, finger millet, groundnut, sesame, and sunflower field trial plots;

Q1

- Maintenance of field trial plots;

- Maintenance of multiplication sites for breeder seed and improved planting materials.

- Maintenance of on-farm trials selected commodities.

- Maintenance of demonstration plots;

Reasons for Variation in performance

Insufficient funds

Total	129,110
<i>Wage Recurrent</i>	<i>0</i>
<i>Non Wage Recurrent</i>	<i>129,110</i>
<i>NTR</i>	<i>0</i>

Output: 01 5102 Research extension interface promoted and strengthened

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
1.NARO-NAADS Joint workshops and meetings conducted;	221002 Workshops and Seminars	5,520
2.Capacity development workshops for IARD;	221005 Hire of Venue (chairs, projector etc)	250
3.Planning/Review/Feedback/ workshops and meetings held;	221007 Books, Periodicals and Newspapers	2,500
4.Make contributions to NGOs and CBOs; subscribe to associations;	221008 Computer Supplies and IT Services	10,500
5.Networking ,Partnerships and collaboration stakeholders meetings held;		
6.sensitisation workshops and meetings of stakeholders conducted;		
7.Conduct open days/farmer field schools, and participate in		

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs
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US\$ Thousand

Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 11 National Semi arid Research

- exhibitions/trade fairs/Agricultural show/Field days;
 8. Production of extension and promotional materials in the media facilitated;
 9. Production of research promotional materials for the media facilitated;
 10. Sensitisation/training farmers;
 11. Establishment on-farm trials in the AEZs;
 12. Radio talk shows conducted;
 13. Development/Production of extension materials;
 14. Promote NARO technologies in the AEZs;
 15. Advocacy and promotional workshops and meetings held;
 16. Establishment of demonstration sites with farmer groups in the AEZs;
 17. Establishment of mother gardens in the AEZs;
 18. Agricultural technologies and information availed to uptake pathways;

Cumulative Outputs Achieved by the end of the Quarter:

Small assortment of office stationary and consumables

Q3

- 100 cow pea Leaflets and 2 Posters printed

Q2

- 2 training manuals for the use of forage sorghum for livestock feeding developed.

Q1

One workshop for IARD, one workshop on planning/review, held.

Reasons for Variation in performance

Insufficient funds available

Total	18,770
<i>Wage Recurrent</i>	<i>0</i>
<i>Non Wage Recurrent</i>	<i>18,770</i>
<i>NTR</i>	<i>0</i>

Output: 01 51 04 Agricultural research capacity strengthened

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
1. Stationery and office consumables procured;	211102 Contract Staff Salaries (Incl. Casuals, Temporary)	43,200
2. Office equipment maintained;	221001 Advertising and Public Relations	1,350
3. Electricity utility bills paid;	221003 Staff Training	15,000
4. Telephone, Postage and courier services used;	221004 Recruitment Expenses	2,000
5. Vehicle serviced;	221006 Commissions and Related Charges	19,839
6. Road infrastructure maintained ;	221009 Welfare and Entertainment	12,035
7. Office buildings maintained;	221012 Small Office Equipment	875
8. Laboratory buildings maintained;	224002 General Supply of Goods and Services	19,544
9. Residential houses - buildings maintained;	226001 Insurances	150
10. Farm buildings maintained;	227001 Travel Inland	310
11. Compound maintained;	227004 Fuel, Lubricants and Oils	500
12. Field plot/paddocks maintained;	228001 Maintenance - Civil	2,500
13. Maintain effective ICT facilities;	228002 Maintenance - Vehicles	32,665
14. Subscription for internet;	228003 Maintenance Machinery, Equipment and Furniture	2,745
15. 4 Management committee meetings;	228004 Maintenance Other	11,119
16. 1 Annual review and planning meeting held;		
17. 3 Quarterly entity accounts, Financial statements, commitment control reports, several manual books of accounts maintained. Bank charges timely paid;		
18. Maintenance of machinery;		
19. Water system maintenance paid.		

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	US\$ Thousand
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 11 National Semi arid Research

20. Monitoring and evaluation of research activities in the PARI conducted;
21. MIS institutionalised in the PARIs.

Cumulative Outputs Achieved by the end of the Quarter:

- One office computers serviced.

Q2

- Office utility bills paid.
- Office computers, 1 laptop, 2 printers and 1 photocopier serviced;
- Assortment of office stationery and office consumables procured;-
- Postage and courier services used;
- 3 Vehicles serviced;
- Office buildings maintained; - Compound maintained;
- October-December 2012 subscription for internet paid;
- Acquisition of newspapers;
- security maintained
- Break tea and Refreshments provided ;

Q1

- Management and maintenance of physical infrastructure, buildings and research fields in Serere
- Stationery and office consumables procured;
- Office equipment maintained;
- Postage and courier services used;

Reasons for Variation in performance

Insufficient funds

Total	163,831
<i>Wage Recurrent</i>	43,200
<i>Non Wage Recurrent</i>	89,464
<i>NTR</i>	31,167

Programme 12 National Laboratories Research

Outputs Provided

Output: 01 5101 Generation of agricultural technologies

Annual Planned Outputs:	Item	Spent
1. Improved fertiliser recommendation and extension packages in place	211103 Allowances	1,500
2. Maintenance of cover crop demonstrations at NARL	221002 Workshops and Seminars	8,960
3. Mass production of bioagents and field releases	221007 Books, Periodicals and Newspapers	6,200
4. Increased centralized germplasm base collection for target species.	221011 Printing, Stationery, Photocopying and Binding	2,000
5. Work animal-drawn implements for small and large grain seeded crops developed	222001 Telecommunications	20,000
6. Analysed products free of heavy metals.	223005 Electricity	113,000
7. Production of user manual of drying technologies to reduce post harvest losses.	223006 Water	3,500
8. Equipping First aid boxes with the necessary consumables and drug, 20 technicians who handle chemicals provided with protective gear by June 2013	227004 Fuel, Lubricants and Oils	48,081
9. Telephone bill settled		
10. Purchase lab consumables, 250 corporate wear, 10 sign posts designed		

Cumulative Outputs Achieved by the end of the Quarter:

- Field recoveries of arboreal termites made in 4 out of 14 release sites in Nakasongola district after 7 months of release of Kamwenge

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	<i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 12 National Laboratories Research

arboreal termites introduced to control subterranean termites
 - Three termite species in the genera Macrotermes, Odontotermes and Acanthotermes were recovered at release sites of arboreal termites in Nakasongola district during the dry season
 - Analysis of the data obtained during the three drying experiments of NERICA 10 rice variety during in Hoima and Lira districts.
 - Assembled, processed and conserved 53 accessions of indigenous vegetable under cold storage

Q2

- Designed maize post harvest handling leaflet in conjunction with ARIS leaflet ready for multiplication
 - 80 demos on fertilizer the use for increased production implemented

Q1

Seed multiplication seeds fields established, maintenance of cover crop demonstrations,
 Drying methods to reduce losses in harvest,
 Equipping first aid boxes with the necessary consumables and drugs,

Reasons for Variation in performance

Late release of funds

Total	203,240
<i>Wage Recurrent</i>	<i>0</i>
<i>Non Wage Recurrent</i>	<i>203,240</i>
<i>NTR</i>	<i>0</i>

Output: 01 5102 Research extension interface promoted and strengthened

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
1 Science conference, 1 open day, 1 Annual review planning workshop, 4 peer review seminars, 1 staff AGM, 1 Budget retreat and one budget conference by June 2013.	221002 Workshops and Seminars	16,000
NARO research results, outputs, products and services published promoted and disseminated in Agricultural production and mgmt text books, booklets manuals and pamphlets	221005 Hire of Venue (chairs, projector etc)	225
A website providing up to date information on NARL	221008 Computer Supplies and IT Services	2,000
Hiring venue for workshops, seminars and retreats.		
50 computers serviced and repaired, Quarterly internet, modem and website subscriptions.		
Printing of brochures, banners, sign posts		

Cumulative Outputs Achieved by the end of the Quarter:

- Printing 500 NARL brochures
 - Assortment of stationery purchased

Reasons for Variation in performance

Insufficient funds released

Total	18,225
<i>Wage Recurrent</i>	<i>0</i>
<i>Non Wage Recurrent</i>	<i>18,225</i>
<i>NTR</i>	<i>0</i>

Output: 01 5104 Agricultural research capacity strengthened

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	<i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 12 National Laboratories Research

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
Salaries to 40 Casual staff supporting research activities	211102 Contract Staff Salaries (Incl. Casuals, Temporary)	105,000
Costs to burial arrangement and material provided by June 2013	213002 Incapacity, death benefits and funeral expenses	1,613
2 TV shows, 4 News paper supplements, 4 Adverts, 4 radio talk shows run	221001 Advertising and Public Relations	1,400
Atleast 50 staff trained in refresher courses, and 10 trained in longterm and atleast 4 communal trainings	221003 Staff Training	5,000
Atleast 15 NARO staff recruited by end of 2013 and 10 contract staff recruited	221004 Recruitment Expenses	695
4 MC meetings, 4 sub-committee meetings, 8 NARL finance/management meetings, staff review meetings	221006 Commissions and Related Charges	11,853
12 month reunion teas provided, Working day break teas.	221009 Welfare and Entertainment	8,000
100 photocopying reams, 1000 calenders, 300 diaries, Printing services	221011 Printing, Stationery, Photocopying and Binding	500
Heavy duty punch, stapler, Big clips, Desk organiser, calculators	221012 Small Office Equipment	500
Maintenance of IFMS computerised accounting systems.	221016 IFMS Recurrent Costs	250
Settlement of Telephone, airtime and internet bills	222002 Postage and Courier	500
Annual subscription, Postage of documents and samples of scientific materials for analysis.	223004 Guard and Security services	1,206
Electricity bills for Labs and offices paid on quarterly basis	224002 General Supply of Goods and Services	748,359
Hosting consultants for specific research activities.	225001 Consultancy Services- Short-term	800
Payment of motor third party, personnel and vehicle insurance	226001 Insurances	263
Director, Finance, Internal Audit, Administrator travel for 3 nights per quarter to monitor research activities and value for money audit. Including fuel for internal travel	227001 Travel Inland	103,241
Travel to Research collaborators overseas and organised research events	228001 Maintenance - Civil	8,424
Fuel for operations, Officers, Staff bus, compound maintenance	228002 Maintenance - Vehicles	114,974
Repair of institute buildings	228003 Maintenance Machinery, Equipment and Furniture	5,000
Repair of institute vehicles	228004 Maintenance Other	4,418
Repair of 2 tractors, 2 mowers, 3 photocopiers, 2 fax, 6 printers.		
Maintenance of 3 water pump, opening of drainage channels, etc. Clean planting materials		
Analysed plant and soil samples for improved productivity		
Availability of plant species		
Revenue from gate collections		
Rent recovered		
Agricultural implements and equipments		
Hired Agricultural implements and equipments		
Train stakeholders on Agricultural engineering techniques		

Cumulative Outputs Achieved by the end of the Quarter:

Q3

Payment of salaries for casual workers

- Office equipment (2 Photocopier, 1 printer, 10 PCs) maintained;
- 2 Vehicles serviced;
- Compound maintained;
- January-March 2013 2012 subscription for internet paid;

Q2

- Management and maintenance of physical infrastructure, buildings and research plots in Namalere, Kawanda and Entebbe BG
- Assortment of stationery and office consumables procured;
- Office equipment (1 Photocopier, 2 printer, 2 PC) maintained;
- 2 Vehicles serviced;
- Compound maintained;
- October-December 2012 subscription for internet paid;
- Acquisition of newspapers;

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	US\$ Thousand
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 12 National Laboratories Research

- security maintained
- Break tea and Refreshments provided ;

Reasons for Variation in performance

Insufficient funds available to execute planned activities

Total	1,121,995
<i>Wage Recurrent</i>	85,000
<i>Non Wage Recurrent</i>	266,068
<i>NTR</i>	770,927

Output: 01 5105 Generation of technologies for priority commodities

Annual Planned Outputs:	Item	Spent
Banana hybrids tolerance stress, high yielding and with consumer acceptable qualities generated and technologies that enhance the banana value chain developed and promoted	224001 Medical and Agricultural supplies	115,076
Develop technology options for exploitation of renewable energy resources, irrigation schedules established		
Develop technology options for water provision and management		

Cumulative Outputs Achieved by the end of the Quarter:

- Held community meetings around the 133 demonstration plots in Northern Uganda
- Planted 121 demonstration plots of M9, FHIA 17 and M2 in Eastern Uganda (Iganga, Bugiri, Kamuli, Sironko, Mayuge and Mbale)

Q2

Banana

- M9 and FHIA 17 promoted in 30 districts. 8 farmers in each district hosting the demos. Iganga, mayuge, kaliro, Sironko, Butalegya, Jinja, Kasese, Bushenyi, Kabaloro, Kanungu, Rukungiri, Ruwelo, Mukono, Mubende, Kiboga, Apac, Nebi and Lira, Masindi and Hoima.

Q1

- High yield and with consumer acceptable qualities varieties maintained. One banana cultivars multiplied

Reasons for Variation in performance

late release of funds

Total	115,076
<i>Wage Recurrent</i>	0
<i>Non Wage Recurrent</i>	115,076
<i>NTR</i>	0

Programme 13 Abi ZARDI

Outputs Provided

Output: 01 5101 Generation of agricultural technologies

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	<i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 13 Abi ZARDI

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
Institute reports effectively produced	211103 Allowances	25,800
Institute effectively supplied with various goods and services	221011 Printing, Stationery, Photocopying and Binding	2,993
Fuel supply maintained for administrative activities	222001 Telecommunications	1,200
	227004 Fuel, Lubricants and Oils	11,856

Cumulative Outputs Achieved by the end of the Quarter:

- Participatory evaluation of the adaptive trial across all the 10 sites was conducted

Dairy, cattle

- Forage multiplication done at Zombo DFI for Napier(1/2 acre), Lablab (1/4 acre), Brachiaria spp, Rhodes grass, Centrosema pubescens and Mucuna (1/4 acre)
- The newly opened pasture field (on-station) was fenced off and the design of plots drawn pending harrowing before planting.

Q3

- Maintenance of beans, maize, cassava field trial plots;
- Maintenance of cassava multiplication sites for
- Maintenance of on station demonstration fish ponds.

Q1

- Maintenance of field trial plots;
- Maintenance of multiplication sites for breeder seed and improved planting materials.
- Maintenance of on-farm trials selected commodities.

Reasons for Variation in performance

insufficient funds for irrigation and drought affected crops

Total	41,849
<i>Wage Recurrent</i>	0
<i>Non Wage Recurrent</i>	41,849
<i>NTR</i>	0

Output: 01 5104 Agricultural research capacity strengthened

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
Institute administrative activities efficiently and effectively carried out	221001 Advertising and Public Relations	735
Corporate image of the institute enhanced	221003 Staff Training	10,000
Improved performance of the institute workforce	221006 Commissions and Related Charges	10,013
	221007 Books, Periodicals and Newspapers	476
	221008 Computer Supplies and IT Services	435
	221009 Welfare and Entertainment	7,447
	221012 Small Office Equipment	298
Overall mandate and functions of management committee effectively exercised	222002 Postage and Courier	90
	224002 General Supply of Goods and Services	56,031
Accessibility of information on current affairs enhanced	227001 Travel Inland	14,976
The institute computer services well maintained	228001 Maintenance - Civil	450
	228002 Maintenance - Vehicles	7,852
Committed and well motivated workforce	228003 Maintenance Machinery, Equipment and Furniture	366
Offices adequately equipped		

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs
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US\$ Thousand

Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 13 Abi ZARDI

- Communication system effectively maintained
- Staff travels facilitated
- Institute buildings maintained
- Institute vehicles maintained
- Institute Machinery Equipment and furniture well maintained
- Communication system effectively maintained
- Various farm and administrative activities implemented
- Institute premises efficiently supplied with electricity
- Administrative and farm yard blocks supplied with water
- Research farm inputs procured
- Committed and motivated staff
- Improved Non Tax Revenue generation and accountability
- Workshop participants well fed and entertained
- Institute NTR Bank accounts maintained

Cumulative Outputs Achieved by the end of the Quarter:

- Office stationery and consumables procured.

Q2

- Office utility bills paid for the second quarter
- Assortment of office stationery and consumables procured;
- Some office equipment (laptop and photocopier) maintained;
- 2 Vehicles serviced;
- Compound maintained;
- Acquisition of newspapers;
- security maintained at Namulone and Kituza
- Break tea and Refreshments provided ;

Q1

- Management and maintenance of physical infrastructure, buildings and research fields at Abi
- Stationery and office consumables procured;
- Office equipment maintained;
- Postage and courier services used;
- Vehicles serviced; Office buildings maintained; Compound maintained;

Reasons for Variation in performance

insufficient funds for irrigation and drought affected crops

Total	109,169
<i>Wage Recurrent</i>	<i>0</i>
<i>Non Wage Recurrent</i>	<i>52,492</i>
<i>NTR</i>	<i>56,677</i>

Output: 01 51 05 Generation of technologies for priority commodities

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs
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US\$ Thousand

Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 13 Abi ZARDI

Item	Spent
224001 Medical and Agricultural supplies	6,664

Annual Planned Outputs:

Appropriate agronomic technologies that increase bean yields developed
 New cassava varieties resistant to CMD and CBSV; with other farmer-preferred attributes developed
 New rice varieties availed to farming communities and Farmers trained on recommended agronomic and post-harvesting techniques of rice
 High yielding forage cultivars disseminated, Performance of 5 cross breed calves determined, Concentrates for supp. feeding developed
 Aquaculture pond Productivity improved to at least 2.0 kg/m² for catfish and to 1.0 kg/m² of pond area
 Appropriate soil & water management interventions developed, Integrated nutrient management (INM) practices adopted by farmers in west Nile

Cumulative Outputs Achieved by the end of the Quarter:

- 2 acres of land opened for multiplication of selected varieties of maize and sorghum

Maize

- 140 farmers were trained in proper agronomic practices of maize and sorghum, pest and disease identification and management. 26 in Arua, manibe subcounty; 30 in Maracha, 26 in Moyo, 25 in Koboko, 68 in Nebbi districts

Beans

- Forage multiplication done at Zombo DFI for Napier (1/2 acre), Lablab (1/4 acre), Brachiaria spp, Rhodes grass, Centrosema pubescens and Mucuna (1/4 acre)

- The newly opened pasture field (on-station) was fenced off and the design of plots drawn pending harrowing before planting.

Q2

- 12.5 new acres planted with NASE 14 cassava variety;
 - On station multiplications fields for maize varieties Longe 4 and 5 were harvested;
 - On station multiplications fields for rice Nerica 1, 4 and 10

Q1

- Maintenance of field trial plots;
 - Maintenance of multiplication sites for breeder seed and improved planting materials.
 - Maintenance of on-farm trials selected commodities.

Reasons for Variation in performance

insufficient funds for irrigation and drought affected crops

Total	6,664
Wage Recurrent	0
Non Wage Recurrent	6,664
NTR	0

Programme 14 Bulindi ZARDI

Outputs Provided

Output: 01 51 01 Generation of agricultural technologies

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	US\$ Thousand
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 14 Bulindi ZARDI

Annual Planned Outputs:	Item	Spent
1. Improving livestock productivity in the mid western zone of Uganda	221002 Workshops and Seminars	7,659
2. Improved livestock breeds introduced and evaluated in the MWZ	221011 Printing, Stationery, Photocopying and Binding	2,000
3. Maintenance of On-Station Casual Labour	222001 Telecommunications	5,000
4. Mechanisms for efficient institutional management strengthened	223005 Electricity	6,000
5. Director to attend meetings and workshops	224002 General Supply of Goods and Services	10,119
6. Utilities & other charges paid	227004 Fuel, Lubricants and Oils	23,454
7. Telephone, postage and courier expenses paid		
8. Management committee meetings Held		
9. Maintained computers and accessories		
10. Maintained Vehicles and Motor Cycles		
11. Stationery and office consumables procured;		

Cumulative Outputs Achieved by the end of the Quarter:

Maintained 1 acre of demonstration for each of Sorghum (Sekedo), Soya (Namusoy1N, Namusoy2N, Namusoy3N & Maksoy4M), Sweet potatoes (NASPOT6, NASPOT8, NASPOT10, NASPOT7, NASPOT11 & Ejumula) to increase farmers' knowledge on Good agronomic Practices and access to adapted crop cultivars in the LACZ.

Q2

- Maintenance of farm livestock (pigs and goats);
- Maintenance of multiplication sites for sweet potatoes and cassava

Q1

- Maintenance of field trial plots;
- Maintenance of multiplication sites for breeder seed and improved planting materials.
- Maintenance of on-farm trials selected commodities.

1

Reasons for Variation in performance

Insufficient funds and drought affected crops in filed trials

Total	54,232
<i>Wage Recurrent</i>	0
<i>Non Wage Recurrent</i>	54,232
<i>NTR</i>	0

Output: 01 51 02 Research extension interface promoted and strengthened

Annual Planned Outputs:	Item	Spent
1. Increased public awareness and access to knowledge, skills and technologies generated by BuZARDI	221008 Computer Supplies and IT Services	4,000

Cumulative Outputs Achieved by the end of the Quarter:

Maintained 1 acre of demonstration for each of Sorghum (Sekedo), Soya (Namusoy1N, Namusoy2N, Namusoy3N & Maksoy4M), Sweet potatoes (NASPOT6, NASPOT8, NASPOT10, NASPOT7, NASPOT11 & Ejumula) to increase farmers' knowledge on Good agronomic Practices and access to adapted crop cultivars in the LACZ. 846 farmers, students special interest groups benefited from the demonstrations plots.

Reasons for Variation in performance

Insufficient funds.

Total	4,000
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Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	<i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 14 Bulindi ZARDI

<i>Wage Recurrent</i>	0
<i>Non Wage Recurrent</i>	4,000
<i>NTR</i>	0

Output: 01 5104 Agricultural research capacity strengthened

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
1. Improving livestock productivity in the mid western zone of Uganda	221006 Commissions and Related Charges	16,113
2. Improved livestock breeds introduced and evaluated in the zon	221009 Welfare and Entertainment	3,780
3. Priority multi-purpose trees and shrubs promoted and planted for sustainable utilization in the MWZ	224002 General Supply of Goods and Services	26,333
4. Multiplication of technologies and generation of income (Maize, Rice and Cassava)	228002 Maintenance - Vehicles	9,276
5. Mechanisms for efficient institutional management strengthened		
6. Building a motivated and self inspired staff		
7. Vehicles and Generator Fueled		

Cumulative Outputs Achieved by the end of the Quarter:

- Subscription for April-June 2013 internet paid;
- Assortment of stationery and office consumables procured;
- Office equipment maintained;
- Postage and courier services used;
- 1 Vehicles serviced;
- Acquisition of newspapers;
- security maintained

Q3

- Stationery and office consumables procured.

Q2

- Subscription for October-December 2012 internet paid;
- Stationery and office consumables procured;
- Office equipment maintained;
- Postage and courier services used;
- 3 Vehicles serviced;
- Acquisition of newspapers;
- security maintained
- Break tea and Refreshments provided ;
- Assortment of office equipment maintained;
- Postage and courier services used;
- Vehicles serviced;
- ICT facilities and Subscription for internet paid;
- Acquisition of books, agric. Information magazines and newspapers;
- security maintained
- Break tea and Refreshments provided ;
- one contracts committee meeting held
- ICT facilities and Subscription for internet paid;

Reasons for Variation in performance

Insufficient funds.

Total	55,503
<i>Wage Recurrent</i>	0
<i>Non Wage Recurrent</i>	29,169
<i>NTR</i>	26,333

Output: 01 5105 Generation of technologies for priority commodities

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	US\$ Thousand
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 14 Bulindi ZARDI

Item	Spent
224001 Medical and Agricultural supplies	24,851
Total	24,851
<i>Wage Recurrent</i>	0
<i>Non Wage Recurrent</i>	24,851
<i>NTR</i>	0

Annual Planned Outputs:
 High yielding and high quality rice varieties and lines for small scale farmers are selected, seed systems developed & disseminated
 Technologies for producing fish seed developed & Cage farming experiment studies set up in L. Albert
 Impacts of climate change determined, Drought tolerant disseminated & Animal feed species with high carbon sequestration popularised

Cumulative Outputs Achieved by the end of the Quarter:
 - Maintained of cassava spacing trial, Collected data on parameters such as plant height and incidence of pests and diseases to identify an optimum and cost effective population density for adapted cassava cultivars in LACZ of Uganda
 - 159 kg of adapted bush bean cultivars (80 kg of NABE 15, 51kg of NABE 4 and 28 kg of NABE 17) produced onstation for onfarm evaluation to identify a farmer preferred cultivar for different farming systems of the LACZ of Uganda

Q3
 - Maintained 8 acres of cassava (NASE 14) multiplication on station.

Q2
 - 8 acres of cassava (NASE 14) multiplication established on station
 - Baseline data on aquaculture status of kibaale district; Majority are small scale farmers, and have indicated shortage of inputs as the most important limiting factor to the enterprise
 - Pond design of the aquaculture site on station developed and approved for implementation

Reasons for Variation in performance
 Insufficient funds and drought affected crops in filed trials

Programme 15 Kacwekano

Outputs Provided

Output: 01 5101 Generation of agricultural technologies

Item	Spent
221007 Books, Periodicals and Newspapers	540
221011 Printing, Stationery, Photocopying and Binding	4,632
222001 Telecommunications	1,600
223005 Electricity	11,000
223006 Water	2,880
227004 Fuel, Lubricants and Oils	17,168

Annual Planned Outputs:
 1. Office utilities maintained
 2. 4 office telephone lines maintained
 3. Sufficient stationery availed
 4. News papers and periodicals availed
 5. 800m of access road maintained free of weeds

Cumulative Outputs Achieved by the end of the Quarter:
 - Maintenance of on station potato and apple field trial plots at Kalyengyere;
 - Maintenance of potato multiplication sites for breeder seed and improved planting materials.
 - Maintenance of on station goats

Q1
 - Maintenance of field trial plots;

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	<i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 15 Kacwekano

- Maintenance of multiplication sites for breeder seed and improved planting materials.
- Maintenance of on-farm trials selected commodities.

Reasons for Variation in performance

Insufficient funds

Total	37,820
<i>Wage Recurrent</i>	<i>0</i>
<i>Non Wage Recurrent</i>	<i>37,820</i>
<i>NTR</i>	<i>0</i>

Output: 01 51 04 Agricultural research capacity strengthened

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
1. 3 quarterly Management Committee meetings	221004 Recruitment Expenses	8,440
2. Two procurement sub-contracts committee meetings held	221006 Commissions and Related Charges	19,619
3. Atleast 2 staff participating in various administrative meetings/ activities	221008 Computer Supplies and IT Services	2,334
4. Wages paid at KAZARDI out stations	221009 Welfare and Entertainment	2,426
5. 12 monthly financial and audit reports compiled and delivered to NAROSEC	223004 Guard and Security services	22,942
6. Number of vehicles, mowers and generators being maintained and running	224002 General Supply of Goods and Services	64,186
7. KAZARDI physical infrastructure maintained and secured	226001 Insurances	75
8. Vehicles for research activities maintained.	227001 Travel Inland	15,497
9. KAZARDI physical infrastructure maintained	227004 Fuel, Lubricants and Oils	462
10. Vehicles for research activities maintained	228001 Maintenance - Civil	1,185
11. Machinery for the institute maintained	228002 Maintenance - Vehicles	7,629
12. Contract staff health protected	228003 Maintenance Machinery, Equipment and Furniture	1,875
13. Office utilities maintained		
14. Institute Human Resource capacity for research improved.		
15. Adequate computer supplies and IT services availed, 1 internet connection serviced		
16. Institute Human Resource capacity for research improved.		
17. 1 bank account maintained		
18. None core staff engaged and facilitated to support core staff in implementing planned project activities		
19. Agroinputs procured		

Cumulative Outputs Achieved by the end of the Quarter:

- Management and maintenance of physical infrastructure (office, laboratory and residential buildings and research fields) and compound maintained Kalyengere and Kachwekano and Bugonji stations
- An assortment of stationary and office consumables procured;
- An assortment of office equipment maintained;
- 5 vehicles serviced;

Q3

- Assortment of office stationery and consumables procured;
- Acquisition of newspapers.

Q2

- Minor maintenance of physical infrastructure at Kachwekano;
- 2 Vehicles serviced;
- 3 office computer serviced;
- Assortment of Office stationery and consumables procured;
- Acquisition of some books and newspapers;

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs
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US\$ Thousand

Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 15 Kachwekano

- security maintained
- Break tea and Refreshments provided ;

Q1

- Management and maintenance of physical infrastructure, buildings and research fields at Kalyengere and Kachwekano and
- Stationery and office consumables procured;
- Office equipment maintained;
- Postage and courier services used;
- Vehicles serviced; Office buildings maintained; Compound maintained;
- Acquisition of books, agric. Information magazines and newspapers;
- security maintained
- Break tea and Refreshments provided

Reasons for Variation in performance

Insufficient funds

Total	146,669
<i>Wage Recurrent</i>	<i>0</i>
<i>Non Wage Recurrent</i>	<i>73,868</i>
<i>NTR</i>	<i>72,801</i>

Output: 01 5105 Generation of technologies for priority commodities

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
Limitations of fish breeding in the natural ecosystems & Environmental parameters on fish rearing established	224001 Medical and Agricultural supplies	10,345

Cumulative Outputs Achieved by the end of the Quarter:

- Maintenance of cassava field trial plots.

Q3

- Maintenance of cassava field trial plots

Q2

- Aquaculture experimental holding facilities located and selected in Kisoro, Kanungu and Kabale. Technical back stopping extended to farmers on rehabilitating the facilities and training regarding best management practices in aquaculture provided
- Fish Laboratory consumables such as retort stands, burrettes, funnels and clips were procured
- Maintenance of cassava field trial plots;
- 160 farm fields established each with 1 kg of NERICA 4 rice variety. Farmers were trained in rice seed production and management. Monitoring of performance of NERICA 4 under farmer multiplication was conducted and was performing better than the local variety WHITE which had high incidence of rice blast and poor vigor.

Q1

- Maintenance of field trial plots;
- Maintenance of multiplication sites for breeder seed and improved planting materials.

Reasons for Variation in performance

Insufficient funds

Total	10,345
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Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	<i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 15 Kacwekano

<i>Wage Recurrent</i>	0
<i>Non Wage Recurrent</i>	10,345
<i>NTR</i>	0

Programme 16 Mukono ZARDI

Outputs Provided

Output: 01 5101 Generation of agricultural technologies

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
Maintenance of vehicles in good conditions for effective execution of research activities in the zone	221011 Printing, Stationery, Photocopying and Binding	16,447
Fuels for implementing Institute research activities.	222001 Telecommunications	3,600
Development of materials that publicise the research activities of the institute	223005 Electricity	11,117
	224002 General Supply of Goods and Services	14,112
	227004 Fuel, Lubricants and Oils	10,642

Purchase of office stationery

Payment for utility bills

Funds required to implement research activities in the zone well managed

Compound development and maintenance and improvement of the road network to facilitate agricultural research

Maintenance of Institute Infrastructure and Assets

Procurement of Lavatories & office cleaning materials (Assorted)

Cumulative Outputs Achieved by the end of the Quarter:

- Maintained on-station trials and provision of improved planting materials for sweet potatoes, cocoa, and fruit trees bananas, rice, coffee.

Q3

Maintained on-station trials for bananas, rice, coffee.

Q2

Rice

•Rice intercropping trials established in the 3 districts in 2nd season 2012. Data collection done on germination percentage, tiller number, plant heights, pest and disease incidence and growth vigour. Germination percentage ranged from 75% to 98% in the different crops. Major diseases included maize streak virus, groundnut rosette disease, leaf spot and bean rust. Severity increased with disease progress.

- Two (2) feedback meetings on improving productivity, Marketability and profitability of fish farming; involving 80 households were successfully conducted in 2 districts (Masaka-Lwengo) and Mpigi.

- 1,250 elite coffee seedlings and 1000 clonal coffee plantlets availed to farmers of Masaka, Mukono and Kayunga. 0.25 acre of coffee wilt resistant varieties planted for demonstration.

- Establish a new banana mother garden with 150 tissue culture plantlets

Q1

- Maintenance of field trial plots;

Reasons for Variation in performance

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	<i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 16 Mukono ZARDI

Insufficient funds

Total	55,918
<i>Wage Recurrent</i>	<i>0</i>
<i>Non Wage Recurrent</i>	<i>55,918</i>
<i>NTR</i>	<i>0</i>

Output: 01 5102 Research extension interface promoted and strengthened

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
Capacity of MUZARDI information resource centre enhanced; publicity materials developed, printed and disseminated	221007 Books, Periodicals and Newspapers	5,000

Cumulative Outputs Achieved by the end of the Quarter:

Maintained the MUZARDI resource centre

Reasons for Variation in performance

Insufficient funds to procure all reading materials available on the market

Total	5,000
<i>Wage Recurrent</i>	<i>0</i>
<i>Non Wage Recurrent</i>	<i>5,000</i>
<i>NTR</i>	<i>0</i>

Output: 01 5104 Agricultural research capacity strengthened

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
1.Capacity in information systems developed, facilitation of Institute activities and internet services	221006 Commissions and Related Charges	6,665
	221008 Computer Supplies and IT Services	3,460
	221009 Welfare and Entertainment	13,084
2. Purchase of small office equipment	221012 Small Office Equipment	121
	223004 Guard and Security services	6,539
3.Refreshments for official guests	224002 General Supply of Goods and Services	547,105
4.Staff motivation and meals	227001 Travel Inland	4,020

7. Purchase of office stationery

8. Settlement of utility bills

Eco-tourism site developed

Appropriate Agro-forestry practices evaluated, developed and disseminated

Bee keeping husbandry practices evaluated and disseminated

Improved fruit trees evaluated, adapted and disseminated in the zone

Cumulative Outputs Achieved by the end of the Quarter:

- Office utility bills paid for April-June 2013.
- Maintenance of additional institute office buildings;
- Assortment of office stationery and consumables procured;
- 4 office computers maintained;
- 2 Vehicles serviced;
- Acquisition of newspapers for the resource centre;
- security maintained
- Break tea and Refreshments provided

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs
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US\$ Thousand

Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 16 Mukono ZARDI

Q3

- Office utility bills paid
- Office stationery and other consumables procured;
- 2 office computers serviced;
- 1 Vehicles serviced;
- security maintained
- Break tea and Refreshments provided

Q2

- Office utility bills paid for october-December 2012.
- Maintenance of 2 institute office buildings;
- Assortment of office stationery and consumables procured;
- 2 office computers maintained;
- 2 Vehicles serviced;
- Acquisition of newspapers;
- security maintained
- Break tea and Refreshments provided

Reasons for Variation in performance

Insufficient funds

Total	580,994
<i>Wage Recurrent</i>	<i>0</i>
<i>Non Wage Recurrent</i>	<i>33,889</i>
<i>NTR</i>	<i>547,105</i>

Output: 01 51 05 Generation of technologies for priority commodities

Annual Planned Outputs:

Management & sustainable use of NR enhanced & Optimum application rate of *Metarhizium anisopliae* determined
 Highest yielding rice intercropping systems identified and samples analysed MSIP meeting conducted
 Effect of graded levels of protein on fish performance evaluated & farmed fish decision support tool developed
 Factors relating to adoption and management of small scale irrigation practices established

Cumulative Outputs Achieved by the end of the Quarter:

- 1 acre of beans (NABE 15 and NABE 4 were planted).
- 1 Acre of rice (NERICA 1 and NERICA 10) planted for seed multiplication.

Q3

- 1,250 elite coffee seedlings and 1000 clonal coffee plantlets availed to farmers of Masaka, Mukono and Kayunga. 0.25 acre of coffee wilt resistant varieties planted for demonstration.
- Establish a new banana mother garden with 150 tissue culture plantlets

Q1

- Maintenance of multiplication sites for breeder seed and improved planting materials [cassava, beans, rice, bananas, coffee].
- Maintenance of demonstration plots [cassava, rice, vegetables];
- Maintenance of field trial plots;
- Maintenance of on-farm trials selected commodities

Reasons for Variation in performance

Insufficient funds

<i>Item</i>	<i>Spent</i>
224001 Medical and Agricultural supplies	25,267

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	<i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 16 Mukono ZARDI

Total	25,267
<i>Wage Recurrent</i>	<i>0</i>
<i>Non Wage Recurrent</i>	<i>25,267</i>
<i>NTR</i>	<i>0</i>

Programme 17 Ngetta ZARDI

Outputs Provided

Output: 01 5101 Generation of agricultural technologies

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
1. Issues concerning the Organisation discussed and resolved	221011 Printing, Stationery, Photocopying and Binding	4,480
2. Management & committee meetings held	222001 Telecommunications	5,200
4. Utilities & other charges paid.	223005 Electricity	6,000
6. Staff motivated.	223006 Water	6,872
	224002 General Supply of Goods and Services	9,786
8. Telephone, postage and courier services used.	227004 Fuel, Lubricants and Oils	8,021
9. Water systems maintenance paid		
10. Bank charges and commission paid		
11. Farm groups capacity enhanced		
13. Farm demonstration trials sustained		

Cumulative Outputs Achieved by the end of the Quarter:

- Preparation of on-station maize, beans trial plots.

Q2

- Maintenance of field cassava, rice, maize, beans trial plots;
- Maintenance of multiplication cassava sites .
- Maintenance of sesame finger millet and sorghum demonstration plots;

Reasons for Variation in performance

Very insufficient funds and severe drought affected most crops in the field trials

Total	40,360
<i>Wage Recurrent</i>	<i>0</i>
<i>Non Wage Recurrent</i>	<i>40,360</i>
<i>NTR</i>	<i>0</i>

Output: 01 5102 Research extension interface promoted and strengthened

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
1. Dissemination of research findings made	227001 Travel Inland	18,900
2. Utilisation of improved farming practices enhanced		

Cumulative Outputs Achieved by the end of the Quarter:

An assortment of small office consumables purchased

Q3

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	US\$ Thousand
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 17 Ngetta ZARDI

Office consumables purchased

Q2

Utility bills paid

Q1

Small amounts of stationery purchased

Reasons for Variation in performance

Very insufficient funds

Total	18,900
<i>Wage Recurrent</i>	0
<i>Non Wage Recurrent</i>	18,900
<i>NTR</i>	0

Output: 01 5104 Agricultural research capacity strengthened

Annual Planned Outputs:	Item	Spent
1. Staff technical capacity developed	221001 Advertising and Public Relations	780
3. Compounds, roads, farm buildings & structures maintained.	221003 Staff Training	11,200
	221008 Computer Supplies and IT Services	545
	221009 Welfare and Entertainment	7,938
	221012 Small Office Equipment	93
5. Vehicles, machineries & equipment maintained	224002 General Supply of Goods and Services	206,121
	227001 Travel Inland	14,000
6. Staff motivated.	228001 Maintenance - Civil	2,971
	228002 Maintenance - Vehicles	17,050
7. Compounds, roads, farm buildings & structures maintained.		
10. Bank charges and commission paid		
11. Farm groups capacity enhanced		
12. Farm buildings and structures maintained		
13. Farm demonstration trials sustained		

Cumulative Outputs Achieved by the end of the Quarter:

- Office stationery and consumables procured;
- 1 office photocopier maintained;
- Acquisition of newspapers;
- security maintained
- Break tea and Refreshments provided
- Internet subscription paid.
- 2 vehicles serviced

Q2

- Assortment of office stationery and consumables procured;
- 2 Office computers maintained;
- 3 Vehicles serviced;
- Acquisition of newspapers;
- security maintained
- Break tea and Refreshments provided

Q1

Reasons for Variation in performance

Insufficient funds

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	<i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 17 Ngetta ZARDI

Total	260,697
<i>Wage Recurrent</i>	<i>0</i>
<i>Non Wage Recurrent</i>	<i>54,577</i>
NTR	206,121

Output: 01 5105 Generation of technologies for priority commodities

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
Improved/new varieties of rice adapted	224001 Medical and Agricultural supplies	17,433
Performance of 4 pasture species compared on-station & High yielding grass and legume pasture species adapted.		
Optimum catfish & tilapia stocking ratios established, Performance of fish feeds documented and Feed rations/ regimes developed.		
<i>Cumulative Outputs Achieved by the end of the Quarter:</i>		
- Maintenance of field cassava, rice, maize, beans trial plots;		
- Maintenance of 27 acres of cassava seed multiplication sites.		
Q3		
- Maintenance of cassava, rice, maize, beans trial plots;		
- Maintenance of cassava seed multiplication.		
Q2		
- Maintenance of field cassava, rice, maize, beans trial plots;		
- Maintenance of multiplication cassava sites .		
<i>Reasons for Variation in performance</i>		
Insufficient funds and drought affected crops.		
	Total	17,433
	<i>Wage Recurrent</i>	<i>0</i>
	<i>Non Wage Recurrent</i>	<i>17,433</i>
	NTR	0

Programme 18 Nabium ZARDI

Outputs Provided

Output: 01 5101 Generation of agricultural technologies

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
Management practices that affect the performance of goats assessed and appropriate interventions recommended in Teso and Karamoja sub-regions.	221002 Workshops and Seminars	2,455
Efficative botanicals in controlling crop pests and diseases identified.	221007 Books, Periodicals and Newspapers	800
Appropriate water harvesting (two) and conservation techniques (two) identified and promoted for the semi-arid areas by year 2013.	221011 Printing, Stationery, Photocopying and Binding	2,060
At least 2 tree species for food production on station identified and promoted by 2013.	222001 Telecommunications	400
Opportunities and necessities for use of research outputs for innovation identified.	223005 Electricity	480
	223006 Water	400
	227004 Fuel, Lubricants and Oils	4,878
<i>Cumulative Outputs Achieved by the end of the Quarter:</i>		
- Maintained on station demonstration animals (8 cambrough pigs and 6 piglets as pure/parent stock for technology)		
- Maintained on station pastures and forages		
<i>Reasons for Variation in performance</i>		
Insufficient funds and drought affected crop management		

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	<i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 18 Nabium ZARDI

Total	11,473
<i>Wage Recurrent</i>	<i>0</i>
<i>Non Wage Recurrent</i>	<i>11,473</i>
<i>NTR</i>	<i>0</i>

Output: 01 5102 Research extension interface promoted and strengthened

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
At least 2 Apiary demo sites established and maintained at Nabuin and Serere.	221002 Workshops and Seminars	10,444
At least 3 farmer trainings on apiary management held in the zone.	227001 Travel Inland	6,400
At least 10 TOTS in each district in Karamoja and Teso backstopped on Apiary management.		
Honey processing equipment and improved beehives procured.		

Cumulative Outputs Achieved by the end of the Quarter:

- 91 APFs facilitators and FEWs trained in seed production, quality control and pest management

Q3

Germplasm of Sorghum, pearl millet, maize, finger millet, sunflower, simsim, and other minor crops collected from Karamoja being tested on station.

Q1

Weed management carried out, Diseases and pests controlled, one sensitisation workshop held.

Reasons for Variation in performance

Insufficient funds and staff

Total	16,844
<i>Wage Recurrent</i>	<i>0</i>
<i>Non Wage Recurrent</i>	<i>16,844</i>
<i>NTR</i>	<i>0</i>

Output: 01 5104 Agricultural research capacity strengthened

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
1. Investment in business/income generating activities for support and supplement NabuZARDI budget.	211102 Contract Staff Salaries (Incl. Casuals, Temporary)	5,470
2. Policy guidelines for efficient management of Nabuin designed and produced.	221001 Advertising and Public Relations	153
3. Efficient and effective decision making for proper management of Nabuin.	221003 Staff Training	9,583
4. Financial reports submitted on time to meet the required deadlines to facilitate a steady flow of funds.	221004 Recruitment Expenses	2,000
5. Audit reports submitted on time to meet the required deadlines for quick decision making.	221006 Commissions and Related Charges	21,222
6. Procurement reports submitted on time as required by world bank & PPDA .	221008 Computer Supplies and IT Services	784
7. Financial policy guidelines developed & existing ones reviewed to strengthen the system .	224002 General Supply of Goods and Services	30,431
8. Routine administrative & research activities undertaken.	227001 Travel Inland	1,300
9. Necessary services from service providers like banks provided.	228001 Maintenance - Civil	250
10. Routine administrative overhead activities undertaken.	228002 Maintenance - Vehicles	5,226
11. Human resource issues managed effectively.		

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs <i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 18 Nabium ZARDI

12. Institute reports, workplans, communications and other documents written.
13. Availability of the necessary utilities services like water, electricity and telephone.
14. Office space for staff-Moroto acquired.
15. Efficient fleet management ensured.
16. Physical infrastructure and human resource to do research maintained.
17. NabuZARDI Research publicized and promoted.

Cumulative Outputs Achieved by the end of the Quarter:

- Assortment of stationery and office consumables procured.
- Office rent and other utility bills paid

Q3

- Assortment of stationery and office consumables procured.

Q2

- Some assorted stationery and office consumables procured;

Q1

- Office rent paid in Moroto and Management and maintenance of physical infrastructure in Serere;
- Stationery and office consumables procured;
- Office equipment maintained;
- Postage and courier services used;
- 1 Vehicles serviced;
- Acquisition of books, agric. Information magazines and newspapers;
- security maintained
- Break tea and Refreshments provided ;
- one contracts committee meeting held
- ICT facilities and Subscription for internet paid;

Reasons for Variation in performance

Insufficient funds available for all planned outputs

Total	76,419
<i>Wage Recurrent</i>	5,470
<i>Non Wage Recurrent</i>	39,770
<i>NTR</i>	31,179

Output: 01 5105 Generation of technologies for priority commodities

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
Livestock management options developed, Technologies for water harvesting/harnessing and storage evaluated	224001 Medical and Agricultural supplies	62,513
Livestock management options developed		
Labour saving animal drawn technologies catalogued and its efficacies established		
Technologies for water harvesting/harnessing and storage evaluated		

Cumulative Outputs Achieved by the end of the Quarter:
 Maintained 18 acres of NASE 14 cassava. Planted 1 acre of 3 new CBDSD resistant cultivars, 4 more acres of NASE 14 in Nabuin and opened up and planted 10 acres of NASE 14 in Apeitolim, Napak district.

Q3

- Maintained on station demonstration and multiplication fields.

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	US\$ Thousand
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 18 Nabium ZARDI

Q2

- Two multiplication and demonstration sites for 15 pasture and fodder species maintained on-station
- Collected samples of *Brachiaria brizantha* (C. 26110), *Lablab purpureus*, *Canavalia brasiliensi*, *Brachiaria hybrid* (CIAT 36087 cv Mulato II), *Brachiaria brizantha* (CIAT 26024) and mulato II from two evaluation trials of Serere and Katakwi districts. Pasture samples undergoing laboratory analysis for dry matter content and crude protein.
- Maintained evaluation trials of *Gliricidia* and *Brachiaria* mixture for the establishment period in Amuria and Kumi districts

Q1

- Maintenance of multiplication sites for breeder seed and improved planting materials.
- Maintenance of field trial plots;
- Maintenance of on-farm trials selected commodities.
- Maintenance of demonstration plots;

Reasons for Variation in performance

Insufficient funds released, insufficient staff and drought affected crop management

Total	62,513
<i>Wage Recurrent</i>	0
<i>Non Wage Recurrent</i>	62,513
<i>NTR</i>	0

Programme 19 Mbarara ZARDI

Outputs Provided

Output: 01 51 01 Generation of agricultural technologies

Annual Planned Outputs:

Validation and evaluation of agricultural technologies in the Zone supported.

Cumulative Outputs Achieved by the end of the Quarter:

- Maintained on station demonstration plots and mother gardens in Kruhura district.
- Three mothergardens for improved mango, citrus and avocados were established in Ntungamo district

Item	Spent
221011 Printing, Stationery, Photocopying and Binding	5,000
222001 Telecommunications	4,000
223005 Electricity	10,000
227004 Fuel, Lubricants and Oils	7,505

Q3

Maintained on station demonstration plots and mother gardens.

Q2

- Three mothergardens for improved citrus and avocado varieties established in Ntungamo district
- 2,000 rootstocks for mango and citrus fruits were raised
- Documentation of pests and diseases affecting improved fruits in zone completed (500 posters printed and disseminated)

Q1

- Maintenance of field trial plots;
- Maintenance of multiplication sites for breeder seed and improved planting materials.
- Maintenance of on-farm trials selected commodities.

Reasons for Variation in performance

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	<i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 19 Mbarara ZARDI

Insufficient funds available

Total	26,505
<i>Wage Recurrent</i>	<i>0</i>
<i>Non Wage Recurrent</i>	<i>26,505</i>
<i>NTR</i>	<i>0</i>

Output: 01 5102 Research extension interface promoted and strengthened

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
Computers serviced and maintained	221008 Computer Supplies and IT Services	3,200
<i>Cumulative Outputs Achieved by the end of the Quarter:</i>		
Continued monitoring the livestock disease multi-stakeholder innovation platform in Mbarara district.		
Q3		
Continued monitoring the livestock disease multi-stakeholder innovation platform in Mbarara district.		
Q2		
Activities of the livestock disease multi-stakeholder innovation platform monitored in Mbarara district.		
Q1		
None		
<i>Reasons for Variation in performance</i>		
Insufficient funds to conduct operation activities		
	Total	3,200
	<i>Wage Recurrent</i>	<i>0</i>
	<i>Non Wage Recurrent</i>	<i>3,200</i>
	<i>NTR</i>	<i>0</i>

Output: 01 5104 Agricultural research capacity strengthened

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
1. Financial, Audit, Procurement and Stores reports prepared and submitted to NAROSEC. Accounting stationary collected from NAROSEC. Professional bodies conference, Finance Officers' workshop, Sub-contract Committee and bid evaluation meetings attended.	221006 Commissions and Related Charges	10,013
2. Institute administrative activities efficiently managed	221009 Welfare and Entertainment	6,250
3. Annual subscription to professional bodies paid and professional bodies conferences attended	224002 General Supply of Goods and Services	82,348
4. Human Resource reports prepared and submitted to NAROSEC	227001 Travel Inland	38,400
5. Management and Administrative meetings attended at NAROSEC	228002 Maintenance - Vehicles	8,929
6. Meetings and other administrative matters attended.	228003 Maintenance Machinery, Equipment and Furniture	750
7. Farm infrastructure improved		
8. Animal diseases prevention and controlled		

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs <i>UShs Thousand</i>
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 19 Mbarara ZARDI

- 9.Improved Animal production and productivity
- 10.Well motivated and hard working herdsmen
- 11.Staff houses in habitable condition at all times
- 12. Management Committee meetings facilitated.

Cumulative Outputs Achieved by the end of the Quarter:

- Management and maintenance of physical infrastructure, buildings and research fields and fences;
- Assortment stationery and office consumables procured;
- Assortment of office equipment maintained;
- 4 Vehicles serviced;
- Acquisition of books, agric. Information magazines and newspapers;
- security maintained
- Break tea and Refreshments provided;

Q3

- Maintenance of research fields and paddocks;
- Assortment of office stationery and consumables procured

Q2

- Maintenance of research fields and paddocks;
- Assortment of office stationery and consumables procured;
- Acquisition of newspapers;
- Office photocopier maintained;
- 2 vehicles serviced;
- Internet subscription for October-December 2012 paid;
- security maintained
- Break tea and Refreshments provided

Q1

- Management and maintenance of physical infrastructure, buildings and research fields and fences;
- Stationery and office consumables procured;
- Office equipment maintained;
- Postage and courier services used;
- Vehicles serviced;
- ICT facilities and Subscription for internet paid;
- Acquisition of books, agric. Information magazines and newspapers;
- security maintained
- Break tea and Refreshments provided

Reasons for Variation in performance

Insufficient funds

Total	146,689
<i>Wage Recurrent</i>	<i>0</i>
<i>Non Wage Recurrent</i>	<i>64,342</i>
<i>NTR</i>	<i>82,348</i>

Output: 01 51 05 Generation of technologies for priority commodities

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs <i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 19 Mbarara ZARDI

Annual Planned Outputs:

IPM options for beans developed and disseminated
 Nutrients limiting banana production on at least two different soil types in Isingiro district documented
 Appropriate method for control of FMD and ECF validated & documented and Extent of feed conservation determined & Methods used to conserve feed identified and evaluated
 FCR of farm made and commercial pellets of Jorda services and Ugachick on pond & caged determined
 At 1 coffee wilt disease tolerant variety disseminated in 4 districts by June 2013
 Agro forestry technologies for production and utilization of fodder adapted and disseminated in the zone

Cumulative Outputs Achieved by the end of the Quarter:

- Maintenance of demonstration plots (agroforestry);
- Maintenance of multiplication sites for breeder seed and improved planting materials (groundnuts).
- Maintenance of field trial plots (sweet potatoes);

Q3

- Maintenance of demonstration plots;
- Maintenance of multiplication sites for breeder seed and improved planting materials.
- Maintenance of field trial plots;

Q2

Bananas

- Nutrient flow balances with major nutrient management documented .
- Approximately 33.8 %, 25.3 % of the sampled household use FYM and crop residues as sources of nutrients
- Approximately 39.5 %, 32.5 % and 20.9 % of banana fields possess trenches, dug-out ditches and grass bund as measures against soil erosion and surface runoff
- Only 2.1 % of the total income from banana sales is invested back into natural resource management
- Only 19.4 % of the sampled households have soil conservation measures placed in banana fields

Reasons for Variation in performance

Insufficient funds and drought affected crops trials.

Total	20,421
<i>Wage Recurrent</i>	<i>0</i>
<i>Non Wage Recurrent</i>	<i>20,421</i>
<i>NTR</i>	<i>0</i>

Programme 20 Buginyaya ZARDI

Outputs Provided

Output: 01 5101 Generation of agricultural technologies

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs
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US\$ Thousand

Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 20 Buginyaya ZARDI

Annual Planned Outputs:	Item	Spent
1.1: Farming systems and livelihood characteristics including farmers' agricultural needs, constraints and opportunities in the Busoga subzone validated and documented	221002 Workshops and Seminars	5,464
3.1: Three (3) cost effective fungicide spray regimes identified for management of Coffee Berry Disease (CBD) on farm in Bulambuli, Kapchorwa and Sironko Districts	221011 Printing, Stationery, Photocopying and Binding	17,803
3.2 Effective soil nutrient options that improve arabica coffee plant nutrient status identified	222001 Telecommunications	6,881
3.3: 5000 seedlings available to uptake pathways and capacity of farmers to produce quality arabica coffee seedlings enhanced	223005 Electricity	2,400
4.1: 25 t Quality basic seed potato produced and available to uptake pathways	227001 Travel Inland	30,443
5.1: Quality and quantity of fruit production in the old orchard enhanced, Plants in the new orchard maintained and growing well	227004 Fuel, Lubricants and Oils	19,134
6.1: High quality sweet potato varieties and their technology validated and recommended for production in the mid altitude areas of the SEAEZ		
6.2: High quality maize varieties validated for production in the mid altitude areas of the U' SEAEZ		
6.3: High quality farmer preferred bean varieties validated and recommended for production in the mid altitude areas of the SEAEZ		
6.4: High quality farmer preferred cassava varieties multiplied for uptake pathways in the mid altitude areas of the SEAEZ		
7.1: Disease tolerant cassava varieties identified and validated for multiplication and availability to Iganga, Kamuli, Palisa, Mayuge, Busia districts		
7.2: Farmer preferred quality cassava planting material available to uptake pathways		
7.3: High quality disease resistant groundnut lines identified for release Iganga, Kamuli, Palisa, Mayuge, Busia districts		
8.1: Promising Integrated weed management options in maize validated with farmer groups on-farm in Pallisa, Iganga, Mayuge, Kamuli and Busia		
9.1: Promising fertilizer application options in a maize based intercropping system identified for validation in Pallisa, Iganga, Mayuge, Kamuli and Busia		
10.2: Stock of different goat genotypes (Boer, Toggenburgs and Indigenous goats) maintained for experimentation at Bulegeni station		
10.3: Capacity of the farmers in profitable management of goats in the selected districts enhanced		
13a.1a: Management committee and staff meetings conducted		
12a.4: Improved communication, Telecommunication, Internet services and other Utilities i.e Electricity		
12a.5: Staff capacity to deliver services on demand and respond to stakeholders needs enhanced		
12a.7: Staff kept abreast of current affairs and new information in the market		

Cumulative Outputs Achieved by the end of the Quarter:

- Maintenance of field trial plots for wheat, apples, sweet potatoes, and potato;
- Maintenance of multiplication sites for breeder seed and improved planting materials (groundnuts, horticulture and agroforestry trees).
- Fertiliser trials were maintained

Q3

- Maintenance of field trial plots for wheat, apples;
- Maintenance of multiplication sites for breeder seed and improved planting materials.

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	<i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 20 Buginyaya ZARDI

Q2

- Maintenance of field wheat, apples, sweet potatoes trial plots;
- Maintenance of arabica coffee, barley, wheat, apples, sweet potatoes multiplication sites for breeder seed and improved planting materials.

Q1

- Maintenance of field trial plots;
- Maintenance of multiplication sites for breeder seed and improved planting materials.
- Maintenance of on-farm trials selected commodities.

Reasons for Variation in performance

Insufficient funds and lack of vehicles for all vehicles

Total	82,125
<i>Wage Recurrent</i>	<i>0</i>
<i>Non Wage Recurrent</i>	<i>82,125</i>
NTR	0

Output: 01 51 04 Agricultural research capacity strengthened

Annual Planned Outputs:

- 12a.1b: Institute property secured and protected from fire hazard
- 12a.2: Institute premises and facilities maintained in an Environmentally friendly way
- 12a.3: Improved running of office activities, documentation and presentation eased
- 12a.6: Morale of staff and their health kept at high levels for effective delivery of services

Cumulative Outputs Achieved by the end of the Quarter:

- Management and maintenance of physical infrastructure, buildings and research fields at Ikulwe, Bulegeni and Buginyanya stations
- An assortment of stationery and office consumables procured;
- An assortment of office equipment maintained;
- 3 Vehicles serviced;
- Maintained ICT facilities and Subscription for internet paid;
- security maintained at all 3 stations
- Break tea and Refreshments provided

Q3

- Stationery and office consumables procured for all 3 station;
- Office equipment maintained;
- Utility bills paid;
- 2 Vehicles serviced;

Q2

- Management and maintenance of physical infrastructure, buildings and research fields at Ikulwe
- Stationery and office consumables procured;
- Office equipment maintained;
- Postage and courier services used;
- Vehicles serviced;
- Maintained ICT facilities and Subscription for internet paid;
- Acquisition of books, agric. Information magazines and newspapers;
- security maintained
- Break tea and Refreshments provided

<i>Item</i>	<i>Spent</i>
211102 Contract Staff Salaries (Incl. Casuals, Temporary)	24,103
221003 Staff Training	12,615
221006 Commissions and Related Charges	8,346
221007 Books, Periodicals and Newspapers	284
221009 Welfare and Entertainment	2,981
223004 Guard and Security services	724
224002 General Supply of Goods and Services	26,210
227001 Travel Inland	7,768
228002 Maintenance - Vehicles	4,557
228003 Maintenance Machinery, Equipment and Furniture	2,000

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	US\$ Thousand
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 20 Buginyaya ZARDI

Reasons for Variation in performance

Insufficient funds to complete all activities

Total	89,588
<i>Wage Recurrent</i>	24,103
<i>Non Wage Recurrent</i>	39,275
<i>NTR</i>	26,210

Output: 01 5105 Generation of technologies for priority commodities

Annual Planned Outputs:	Item	Spent
High quality maize varieties validated for production in the mid altitude areas of the SEAEZ	224001 Medical and Agricultural supplies	31,843
High quality farmer preferred cassava varieties multiplied for uptake pathways in the mid altitude areas of the SEAEZ and Disease tolerant cassava varieties identified and validated		
Promising Integrated weed management options in rice validated with farmer groups		
Cost effective fungicide spray regimes identified for management of CBD, soil nutrient options that improve Arabica coffee productivity identified and coffee seeds and seedlings availed		
Soil and water conservation measures identified and Promoted, partnerships developed and strategies fro adoption of SLM produced and sensitisations held		

Cumulative Outputs Achieved by the end of the Quarter:

- 28 ha of cassava (NASE 14) multiplication maintained at Ikulwe station.
- Maintenance of 1 acre of beans, 2 acres maize and rice demonstration plots.
- Maintenance of improved coffee planting materials (13 ha coffee seed garden, 7000 pots)

Reasons for Variation in performance

Insufficient funds to conduct all planed activities

Total	31,843
<i>Wage Recurrent</i>	0
<i>Non Wage Recurrent</i>	31,843
<i>NTR</i>	0

Programme 21 Rwebitaba ZARDI

Outputs Provided

Output: 01 5101 Generation of agricultural technologies

Annual Planned Outputs:	Item	Spent
1. High yielding and quality tea planting materials developed.	222001 Telecommunications	600
2. Tea germplasm preserved.	223005 Electricity	1,200
	227004 Fuel, Lubricants and Oils	8,209
3. Reaction of clones to tea pests determined.		
4. Extent of pest and disease infection in tea growing areas known and management options of major pests and diseases developed		
5. Reaction of clones to tea diseases determined.		

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	<i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 21 Rwebitaba ZARDI

6. Tea clones tolerant to Xylaria disease selected for the Western highland agro-ecological zone.

7. Selection of high yielding tea clones in Western highland agro-ecological zone.

8. Tea yields improved through improved soil fertility and water management interventions.

9. Tea yields improved through improved soil fertility and water management interventions.

10. Profitability of tea growing developed by end of June 2013.

11. Appropriate tea mechanical plucking technologies developed.

12. Biochemical profiles of different Ugandan tea clones established.

13. Increased farmers access to improved livestock breeds.

14. Appropriate trees and shrubs with potential for agroforestry adoption selected and evaluated for the Western highland agro-ecological zone.

15. Priority multi-purpose trees and shrubs promoted and planted for sustainable utilization in the zone.

16. Improved livestock breeds introduced and evaluated in the zone.

17. Improved egg hatchability and chick survival generated.

18. Nutritive pasture species introduced and adapted in the zone.

19. Cultivars of bananas adapted to the Western highland agro-ecological zone promoted.

20. Strategies to increase production of honey and other bee products enhanced amongst beekeepers in the zone.

Cumulative Outputs Achieved by the end of the Quarter:

- Maintenance of multiplication sites for rice breeder seed, banana and cassava improved planting materials.

Reasons for Variation in performance

Insufficient funds

Total	10,009
<i>Wage Recurrent</i>	<i>0</i>
<i>Non Wage Recurrent</i>	<i>10,009</i>
<i>NTR</i>	<i>0</i>

Output: 01 5102 Research extension interface promoted and strengthened

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	<i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 21 Rwebitaba ZARDI

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
221001 Advertising and Public Relations	221001 Advertising and Public Relations	3,500
1. Collaboration between Rwebitaba ZARDI and stakeholders strengthened.		
2. Institutional mechanisms that promote farmer innovations and technology adoption promoted.		
 <i>Cumulative Outputs Achieved by the end of the Quarter:</i>		
- Maintenance of demonstration plots rice, tea, banana and cassava.		
- Held a zonal priority setting meeting.		
 <i>Reasons for Variation in performance</i>		
Insufficient funds		
	Total	3,500
	<i>Wage Recurrent</i>	<i>0</i>
	<i>Non Wage Recurrent</i>	<i>3,500</i>
	<i>NTR</i>	<i>0</i>

Output: 01 51 04 Agricultural research capacity strengthened

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
221004 Recruitment Expenses	221004 Recruitment Expenses	2,800
221006 Commissions and Related Charges	221006 Commissions and Related Charges	3,287
221009 Welfare and Entertainment	221009 Welfare and Entertainment	500
223004 Guard and Security services	223004 Guard and Security services	1,448
224002 General Supply of Goods and Services	224002 General Supply of Goods and Services	37,563
227001 Travel Inland	227001 Travel Inland	4,800
228001 Maintenance - Civil	228001 Maintenance - Civil	350
228002 Maintenance - Vehicles	228002 Maintenance - Vehicles	3,554
1. Provision of security services		
2. Stationery and office consumables procured;		
3. Office equipment maintained;		
4. Water system maintenance paid;		
5. Electricity utility bills paid;		
6. Telephone, Postage and courier services used;		
7. Vehicle serviced;		
8. Road infrastructure maintained;		
9. Office buildings maintained ;		
10. Residential houses - buildings maintained ;		
11. Farm buildings maintained ;		
12. Compound maintained ;		
13. Field plot maintained ;		
14. Maintain effective ICT facilities;		
15. Subscription for internet;		
16. 4 Management committee meetings;		
17. Quarterly entity accounts, Financial statements, commitment control reports, several manual books of accounts maintained. Bank charges timely paid;		
18. Acquisition of books, agric. Information magazines and newspapers;		
19. Break tea and Refreshments provided to staff.		

Cumulative Outputs Achieved by the end of the Quarter:

April-June 2013 internet subscription and other utility bills paid
- 3 Vehicles serviced; More office buildings maintained at Rwebitaba and Kyembogo.
- Assortment of furniture engraved
- Bills of quantities of Rwebitaba ZARDI buildings were designed, developed and delivered

Q3

-January-March 2013 internet subscription and other utility bills paid
- Office stationery and consumables procured;
- 1 office photocopier serviced;
- 2 Vehicles serviced; Office buildings maintained at Rwebitaba and Kyembogo.

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	<i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 21 Rwebitaba ZARDI

Q2

- October-December 2012 utility bills paid
- Assortment of office stationery and consumables procured;
- 1 office printer serviced;
- 2 Vehicles serviced; Office buildings maintained;
- Rwebitaba and Kyembog station compounds maintained;
- Acquisition of new vision and monitor newspapers;
- security maintained
- Break tea and Refreshments provided ;

Reasons for Variation in performance

Insufficient release of funds especially for an institute recently operationalised.

Total	54,300
<i>Wage Recurrent</i>	<i>0</i>
<i>Non Wage Recurrent</i>	<i>16,738</i>
<i>NTR</i>	<i>37,563</i>

Output: 01 51 05 Generation of technologies for priority commodities

Annual Planned Outputs:

High yielding and quality tea planting materials developed, Tea germplasm preserved and Reaction of clones to tea pests & pests determined, high yielding and tolerant to Xylaria disease selected

Cumulative Outputs Achieved by the end of the Quarter:

- 20 tea fields (tea gene bank) and two mother gardens maintained on-station
- and two mother gardens maintained.
- 20 acres of cassava (4271 variety) established and maintained on-station

Reasons for Variation in performance

None

<i>Item</i>	<i>Spent</i>
224001 Medical and Agricultural supplies	26,236
Total	26,236
<i>Wage Recurrent</i>	<i>0</i>
<i>Non Wage Recurrent</i>	<i>26,236</i>
<i>NTR</i>	<i>0</i>

Programme 26 NARO Internal Audit

Outputs Provided

Output: 01 51 03 Internal Audit

Annual Planned Outputs:

Internal Controls reviewed and key risks controlled.

Adherence to laid down regulations and policies.

Minimized cases of disagreements with auditors and management arising from their reports.

Payroll embracing all NARO staff audited.

Proper accountability of resources and correct recording of transactions.

<i>Item</i>	<i>Spent</i>
221002 Workshops and Seminars	20,000
221003 Staff Training	3,557
221016 IFMS Recurrent Costs	9,000
224002 General Supply of Goods and Services	10,000
227001 Travel Inland	15,000

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs <i>UShs Thousand</i>
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 26 NARO Internal Audit

Internal audit work conducted professionally at Institutes.

Losses/fraud minimized.

Updated asset register verified as per the physical Items and Cash controls strengthened.

Independence of Internal Auditors strengthened.

Improved accountability.

Internal Auditors Capacity strengthened.

Internal Auditors capacity improved.

Governance and corruption issues identified.

Cumulative Outputs Achieved by the end of the Quarter:

- Audit staff traveled to Kachwekano ZARDI, Mbarara ZARDI, Rwebitaba ZARDI Buginyanya ZARDI, NaLIRRI, NaFORRI to review the issues raised in their internal audit reports. A report on the status of compliancy, internal controls, risks in the PARIs was compiled.

Q3

- Audit staff traveled to 8 institutes to review the issues raised in their internal audit reports.

Q2

- Traveled to 3 institutes to review the issues raised in their internal audit reports.

Reasons for Variation in performance

None

Total	57,557
<i>Wage Recurrent</i>	<i>0</i>
<i>Non Wage Recurrent</i>	<i>57,557</i>
<i>NTR</i>	<i>0</i>

Development Projects

Project 0382 Support for NARO

Capital Purchases

Output: 01 5172 Government Buildings and Administrative Infrastructure

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
Proper equipment for the production of drawings and documents accessed improved sanitary facilities Hygienic and clean kitchen for staff tea at NAROSEC.	231001 Non-Residential Buildings	250,000
Renovated laboratory at NARL.		
Good quality control of construction works. Better working environment for staff.		
Better working environment for staff and scientists.		
ABIZARDI Quality and Quantity of research outputs and staff working environment improved.		
Number of houses maintained		

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs <i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Development Projects

Project 0382 Support for NARO

Better working environment for researchers and scientists

Finishes of hall done
Improved quality and quantity of research outputs and staff working environment.

BuZARDI

Rehabilitation of existing structures and buildings.

KaZARDI

1 Laboratory renovated and 1 seed store repaired.

MuZARDI

At least 1 fish rearing unit constructed
At least 1 organic feeding research house constructed
Construction of vehicles shelter.

RwebiZARDI.

1 office block in Rwebitaba sub- station and 3 office blocks in Kyembogo station

Cumulative Outputs Achieved by the end of the Quarter:

NA

Reasons for Variation in performance

NA

Total	250,000
<i>GoU Development</i>	250,000
<i>External Financing</i>	0
<i>NTR</i>	0

Output: 01 5175 Purchase of Motor Vehicles and Other Transport Equipment

Annual Planned Outputs:

Nil

Cumulative Outputs Achieved by the end of the Quarter:

NA

Reasons for Variation in performance

NA

Total	0
<i>GoU Development</i>	0
<i>External Financing</i>	0
<i>NTR</i>	0

Output: 01 5176 Purchase of Office and ICT Equipment, including Software

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	US\$ Thousand
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Vote Function: 0151 Agricultural Research

Development Projects

Project 0382 Support for NARO

Annual Planned Outputs:	Item	Spent
ICT:	231005 Machinery and Equipment	125,000

ICT and all the accessories in respect of the equipment and Software purchased;

- MIS applications developed
- Web portal developed.

HQs:

Streamlined collaboration services.

- 1.Required software acquired and updated
- 2.Existing Licenses renewed.

ICT Infrastructure and equipment procured for NARO and NAADS joint platform.

Cumulative Outputs Achieved by the end of the Quarter:

NA

Reasons for Variation in performance

NA

Total	125,000
<i>GoU Development</i>	125,000
<i>External Financing</i>	0
<i>NTR</i>	0

Output: 01 5177 Purchase of Specialised Machinery & Equipment

Annual Planned Outputs:	Item	Spent
PR:	231005 Machinery and Equipment	270,000
Necessary tools & equipments procured.		

PROCUREMENT:

Various Specialised Agricultural and Laboratory Machinery & Equipment procured

Cumulative Outputs Achieved by the end of the Quarter:

An assortment of tools and equipment procured

Reasons for Variation in performance

NA

Total	270,000
<i>GoU Development</i>	270,000
<i>External Financing</i>	0
<i>NTR</i>	0

Output: 01 5178 Purchase of Office and Residential Furniture and Fittings

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	<i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Development Projects

Project 0382 Support for NARO

<i>Item</i>	<i>Spent</i>
Annual Planned Outputs:	
Varios furniture and residential fittings procured.	
Cumulative Outputs Achieved by the end of the Quarter:	
An assortment of furniture procured	
Reasons for Variation in performance	
NA	
Total	212,500
<i>GoU Development</i>	<i>212,500</i>
<i>External Financing</i>	<i>0</i>
<i>NTR</i>	<i>0</i>

Outputs Funded

Output: 01 5151 Payments to International Organisations (CGIAR, ASARECA, WARDA)

<i>Item</i>	<i>Spent</i>
Annual Planned Outputs:	
Payment to international organisations made	
Cumulative Outputs Achieved by the end of the Quarter:	
Partial payment to CGIAR made.	
Reasons for Variation in performance	
None	
Total	905,000
<i>GoU Development</i>	<i>905,000</i>
<i>External Financing</i>	<i>0</i>
<i>NTR</i>	<i>0</i>

Outputs Provided

Output: 01 5101 Generation of agricultural technologies

<i>Item</i>	<i>Spent</i>
Annual Planned Outputs:	
NAROSEC :	
Demand driven, market responsive and client oriented research agenda developed	
Quality management system established	
Institutes ISO certified	
Quality management system established	
Research activities effectively supervised, monitored and managed	
General administrative activities.	
Water utility bills paid;	
Electricity utility bills paid;	
Telephone,	
ACCOUNTS:	
Clearance of Bank dues	

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs <i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Development Projects

Project 0382 Support for NARO

ABI ZARDI

New cassava varieties resistant to CMD and CBSV; with other farmer-preferred attributes developed 100 hybrids of CBSD tolerant varieties evaluated for reaction to major diseases

Two survey reports on spread and damage by CBSD in 8 west Nile districts

Increased number of farmers growing, processing and marketing improved cassava Annual cassava production survey report

Current cereal production constraints in west Nile understood

Appropriate agronomic technologies that increase groundnut and bean yields developed

Improved varieties appropriate for WNR developed

New varieties of groundnuts and beans screened for high yield potential, drought tolerance and resistance to major pests and diseases in the zone suitable non fruit provenances/ species and varieties for fodder, food and soil fertility management identified.

Goat husbandry technologies for improving productivity developed

Efficacious medicinal plants available to technology uptake pathways .

BuGIZARDI

1.1 Farming systems and livelihood characteristics including farmers' agricultural needs, constraints and opportunities in the Busoga subzone validated and documented

2.1a) Soil and water conservation measures suitable for Bulambuli, Sironko and Bududa (Mt. Elgon sub-zone) identified and promoted

24 on-farm stakeholders capacity in disease management conducted at 5 sub-counties in various districts in Elgon zone .

5.5. Three (3) apple orchards rehabilitated

5.8. Administration of project supported and facilitated

6.3: High quality farmer preferred bean varieties validated and recommended for production in the mid altitude areas of the SEAEZ Improved technologies for weed management in rice validated and promoted on farm in Pallisa, Iganga, Mayuge, Kamuli and Busia

Performance of introduced goat genotypes established on station

10.2: Stock of different goat genotypes (Boer, Toggenburgs and Indigenous goats) maintained for experimentation at Bulegeni station

2.1a) Soil and water conservation measures suitable for Bulambuli, Sironko and Bududa (Mt. Elgon sub-zone) identified and promoted

24 on-farm stakeholders capacity in disease management conducted at 5 sub-counties in various districts in Elgon zone .

5.5. Three (3) apple orchards rehabilitated

5.8. Administration of project supported and facilitated

6.3: High quality farmer preferred bean varieties validated and

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs <i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Development Projects

Project 0382 Support for NARO

recommended for production in the mid altitude areas of the SEAEZ
Improved technologies for weed management in rice validated and promoted on farm in Pallisa, Iganga, Mayuge, Kamuli and Busia

Performance of introduced goat genotypes established on station
10.2: Stock of different goat genotypes (Boer, Toggenburgs and Indigenous goats) maintained for experimentation at Bulegeni station

Promising good performing wheat lines with resistance to Ug99 identified for adaptation trials

Promising wheat lines with heat and drought tolerance identified for Uganda agro-ecology

Solutions to improved egg hatchability and chick survival generated for local chicken

Low cost diets formulated for pigs & poultry

Pasture and fodder species with high carbon sequestration potentials populized in the zone

Baseline parameters of the production and utilization systems established
Suitable location-specific crop varieties and production practices for different agro ecologies in the MWZ identified

Technology users / clients with in the community identified

Appropriate IPM technology packages for control of pests in 3 priority crops and 1 fruit tree introduced and evaluated on station

4. Stakeholder awareness levels and knowledge on new IPM innovations increased

A regional apiculture research unit developed and institutionalised in the MWZ

Actual and potential soil fertility constraints and limitations to crop productivity identified

Appropriate soil and water conservation (S&WC) technologies established on farm

Priority multi-purpose trees and shrubs promoted and planted for sustainable utilization in the MWZ

Enhanced land productivity, access and use of sustainable agroforestry-based technologies amongst farming communities in MWZ

At least 2 potato genotypes with tolerance to Bacterial wilt selected for on-farm evaluations

Media composition that optimumly supports the in vitro performance of the selected varieties determined and recommended for daily use in tissue culture of potatoes

Subculture level for optimum minituber productivity for selected potato varieties determined

At least 1.5 tonnes of prebasic seed potato generated

About 24 tonnes of prebasic seed generated by June 2013

About 48 tonnes of basic seed generated by June 2013

Inbreeding controlled among 8 farmer groups

Preliminary information generated on incidence, economic injury level and level of resistance to nematodes for different goat genetic breed levels

At least 30 breeding/ foundation stock produced and 100 quality goats maintained and availed for experiments and uptake pathways

Data base of indigenous and exotic fish species in the zone generated

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs <i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Development Projects

Project 0382 Support for NARO

Information on performance of potential apple and pear cultivars generated (On-station)

Information on performance of potential apple and pear cultivars generated (On-farm)

At least 10,000 Clean planting materials of apples and 1000 pears generated
In situ conservation orchard maintained and information for morphological characterisation generated
Information generated on nutrient requirements that optimizes apple productivity and recommended
A protocol for rapid and mass production of apple root stalks generated
At least five sorghum cultivars selected for on-farm evaluation

Appropriate conventional method for control of FMD, ECF, Helminthosis and New Castle disease validated and improved
ITK technologies used in Helminthosis and new castle disease (NCD) management evaluated
Information on prevalence, risk factors and incidence patterns of common cattle diseases documented
Extent of feed conservation in the SWAEZ determined
Methods used to conserve feed in the SWAEZ identified and evaluated
High yielding, marketable and user preferred new improved crop varieties evaluated and promoted.
Major pests and diseases affecting priority crops identified and alternative control strategies developed.
New bio-fortified sweet potato varieties suitable for semi-arid conditions selected and disseminated
At 1 coffee wilt disease tolerant variety disseminated in 4 districts by June 2013
Nutrients limiting banana production on at least two different soil types in Isingiro district documented
FCR of farm made and commercial pellets of Jorda services and Ugachick on pond Nile tilapia and African catfish determined
FCR for Ugachic pellets on caged Nile tilapia and catfish determined in Mabira and Rwabigyemano reservoirs.
High yielding improved fruit varieties for mangoes, citrus and avocados determined and disseminated in the zone
Effective and economically viable integrated fruit pest and disease management technologies determined and disseminated in the zone
Agro forestry technologies for production and utilization of fodder adapted and disseminated in the zone.

MUZARDI

At least 2 acres of each of the 11 priority crops established and/maintained at the institute
At least 1579 litres of fuels for on-station adaptive research activities purchased.

At least 8 farmer managed demonstrations of the new varieties established by 2012

5. Foundation seed/ planting materials of improved crop varieties of prioritised crops made available to the uptake pathways.

Agricultural innovation system analyzed and diagnosed
Identification of the opportunities and necessities for use of research outputs for innovation

NGETTA

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs <i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Development Projects

Project 0382 Support for NARO

Performance of 4 pasture species compared on-station
Fish ponds stocked with tilapia and catfish maintained.

Improved varieties of groundnut, simsim, cassava, rice and beans adapted.

Tea germplasm preserved
Reaction of clones to tea pests determined
Reaction of clones to tea diseases determined

Appropriate tea mechanical plucking technologies developed

Appropriate trees and shrubs with potential for agroforestry adoption selected and evaluated for the Western highland agro-ecological zone

Improved livestock breeds introduced and evaluated in the zone.

Strategies to increase production of honey and other bee products enhanced amongst beekeepers in the zone.

KaZARDI:

At least 2 potato genotypes with tolerance to Bacterial wilt selected for on-farm evaluations

Media composition that optimally supports the in vitro performance of the selected varieties determined and recommended for daily use in tissue culture of potatoes

Subculture level for optimum minituber productivity for selected potato varieties determined

At least 1.5 tonnes of prebasic seed potato generated
About 24 tonnes of prebasic seed generated by June 2013
About 48 tonnes of basic seed generated by June 2013

Inbreeding controlled among 8 farmer groups
Preliminary information generated on incidence, economic injury level and level of resistance to nematodes for different goat genetic breed levels
At least 30 breeding/ foundation stock produced and 100 quality goats maintained and available for experiments and uptake pathways
Data base of indigenous and exotic fish species in the zone generated
Information on performance of potential apple and pear cultivars generated (On-station)
Information on performance of potential apple and pear cultivars generated (On-farm)

At least 10,000 Clean planting materials of apples and 1000 pears generated
In situ conservation orchard maintained and information for morphological characterisation generated
Information generated on nutrient requirements that optimizes apple productivity and recommended
A protocol for rapid and mass production of apple root stalks generated
At least five sorghum cultivars selected for on-farm evaluation.

MBaZARDI:

Appropriate conventional method for control of FMD, ECF, Helminthosis and New Castle disease validated and improved
ITK technologies used in Helminthosis and new castle disease (NCD) management evaluated

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs <i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Development Projects

Project 0382 Support for NARO

Information on prevalence, risk factors and incidence patterns of common cattle diseases documented
 Extent of feed conservation in the SWAEZ determined
 Methods used to conserve feed in the SWAEZ identified and evaluated
 High yielding, marketable and user preferred new improved crop varieties evaluated and promoted.
 Major pests and diseases affecting priority crops identified and alternative control strategies developed.
 New bio-fortified sweet potato varieties suitable for semi-arid conditions selected and disseminated
 At 1 coffee wilt disease tolerant variety disseminated in 4 districts by June 2013
 Nutrients limiting banana production on at least two different soil types in Isingiro district documented
 FCR of farm made and commercial pellets of Jorda services and Ugachick on pond Nile tilapia and African catfish determined
 FCR for Ugachick pellets on caged Nile tilapia and catfish determined in Mabira and Rwabigyemano reservoirs.
 High yielding improved fruit varieties for mangoes, citrus and avocados determined and disseminated in the zone
 Effective and economically viable integrated fruit pest and disease management technologies determined and disseminated in the zone
 Agro forestry technologies for production and utilization of fodder adapted and disseminated in the zone .

RWEBITABA

Tea germplasm preserved
 Reaction of clones to tea pests determined
 Reaction of clones to tea diseases determined

Appropriate tea mechanical plucking technologies developed

Appropriate trees and shrubs with potential for agroforestry adoption selected and evaluated for the Western highland agro-ecological zone

Improved livestock breeds introduced and evaluated in the zone

Strategies to increase production of honey and other bee products enhanced amongst beekeepers in the zone.

NaLIRRI:

Low cost Multi-nutrient mineral blocks (MNB) supplements produced and evaluated
 Socio economic factors affecting use of MNB identified

Increased availability of feed resources in the smallholder dairy system through utilization of crop residues/wastes and agro-industrial by-products

Institutional research capacity improved in animal nutrition
 Project effectively implemented
 Document on N-balance based characterisation of dairy production systems

Decision support tool feed database broadened .

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

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Vote Function: 0151 Agricultural Research

Development Projects

Project 0382 Support for NARO

Effective selected climate change adaptation and mitigation strategies evaluated in livestock based systems

Operational NaLIRRI M&E data base

NARL:

Appropriate methods and management practices for proper utilization of inorganic and organic fertilizers developed

Output 1: Soil fertility and soil erosion/ water management technologies for selected enterprises evaluated

Farmers opinions and profitability of different soil fertility management and soil erosion control/water management technologies assessed

Use of appropriate Integrated crop, soil & water management technologies promoted.

13.1 Prototypes of animal drawn implements for planting, weeding, ridging, harvesting and transportation of selected small and large grain seeded crops developed

13.2 Prototypes of single axle tractor implements for planting, weeding, ridging, harvesting and transportation of selected small and large grain seeded crops developed

Transformation procedures/ protocols for millet/groundnut. Cowpea and tomato published.

IPM packages for management of BBW and other pests developed
Environmentally friendly technologies for CWD management identified
Molecular characterisation of 7 coffee wilt disease resistant varieties completed.

Released and near release bean varieties produced and maintained (Breeder, basic and foundation seeds of all released varieties and segregating population produced)

Introduction, collection and identification of weevil resistant bean genotypes

Generation and evaluation of new cassava genotypes for adaptability and acceptability

New stress tolerant germplasm in place

Fruit and vegetable varieties with resistance to pests/diseases, high yields and consumer acceptable qualities generated and evaluated .

NaCRRRI:

IPM packages for management of Fruit flies seed weevil and other pests identified

Superior orange-fleshed sweet potato (OFSP) clones with high beta-carotene developed

A sweet potato seed system developed in pilot districts

Uninterrupted & Constant Supply of Electricity and water

Activities at different sites carried out according to plan

Effective running operational activities

Functional Generators in working condition

Various types of reports produced for effective management on a day -day basis

4 Staff trained through short courses & Workshops in Finance, Audit Administration, Procurement)

5 Staff trained in various areas of Administration, Finance, Procurement,

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

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Vote Function: 0151 Agricultural Research

Development Projects

Project 0382 Support for NARO

Audit & Science

Required inputs made available for experiment and trials .

NaFIRRI:

Appropriate sites for cage fish culture in central Uganda identified and mapped out for farmers/investors, service providers, policy makers etc
Policy brief on recommendations/strategies for mitigating any potential negative impacts of aquaculture practices (cage farming) on the environment

At least one capture fisheries and two aquaculture technologies developed and disseminated

At least one capture fisheries and two aquaculture technologies developed and disseminated.

NaFORRI:

Annual economic value of forest socio-economic functions determined
Current carbon stocks in various land use systems in Uganda determined
Carbon sequestration rates of selected plantation tree species in Uganda determined
Strategies for accessing carbon credits developed

NaSARRI:

1.5 Consultative meetings held

1.7 participated in world food day celebrations

1.8 Participated in agricultural shows

2.2 Over 2 technical peer review meetings held

1.2 60 crosses made involving 3 resistant parents & 3 susceptible parents to scab, over 10 F 2s planted & data recorded

1.3 16 crosses made & over 10 F 2s'planted on which selections are made for resistance against cowpea scab & leaf blight

2.2 5 synthetic fungicides screened for effectiveness against cowpea scab & leaf blight ; 2 synthetic fungicides effective against laef blight & scab identified

1. 1 20 accessions of cowpea assembled

1.2 6 elite lines with high yield potential evaluated on station -NaSARRI

1.3 7 lines that high yielding, drought tolerant and less shattering selected for advanced yield trials

1.4 2 sets of trials on cowpea yield, shattering & drought tolerance established in 3 TVCs'

1.1 50 accessions assembled and characterized

1.2 45 sweet sorghum accessions planted & screened against local pests & diseases

1.1 80 accessions assembled & characterized

2.1 20 accessions planted & screened against drought, striga, leaf blight and smuts & 15 most promising lines planted & screened against local pests & diseases

1.1 30 accessions assembled & characterized

2.1 30 sorghum accessions planted & screened for pest & disease resistance

1.1 75 accessions assembled and characterized

1.2 70 single plant selections of crosses evaluated for high oil content & limited shattering.

1.3 60 single plant selections evaluated for resistance to Cercospora Cylindrosporium leaf spots in sesame

2.1 7 evaluated for effectiveness to gall midge & webworm

Vote: 142 National Agricultural Research Organisation

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Vote Function: 0151 Agricultural Research

Development Projects

Project 0382 Support for NARO

2.2 6 botanical insecticides screened on station and TVCs.
2.3 3 cultural management options for gall midge & webworm tested in 4 agro-ecological zones

4.4 One improved sesame variety disseminated
Ten lines with improved blast resistance and drought tolerance identified and released

12000 kg of certified seed produced on-farm by farmers. On-farm seed demonstration plots established
10 Elite lines and two agronomic management packages validated on-farm in 5 districts

1.1 100 additional accessions of groundnuts assembled and 200 characterized

1.4 4 advanced lines developed for resistance to leaf spots and rosette

1.5 1 mechanism of rosette resistance understood

2.1 10 studies conducted to ascertain levels of aflatoxin contamination in groundnuts .

2.2 techniques that minimize aflatoxin contamination levels in groundnuts and groundnut based products developed

2.3 1 mechanism of aflatoxin contamination in groundnuts understood
40 cotton accessions collected and characterised.

12 parents selected for crossing

2.1 Six defoliant and 3 growth regulators tested at TVCs.

4.3 Effectiveness of 5 promising pesticides against major cotton pests evaluated at TVCs and farmers' fields

4.4 Four intercropping system evaluated at TVCs

5.1 Races of fusarium wilt prevalent in Uganda determined

3 new seed dressing chemicals tested for the control of bacterial blight and fusarium wilt

2.1 2 trials on 10 chemicals, 10 cultural practices & 8 biorationals evaluated at 6 TVCs'

2.2 IPM options for control of sclerotinia leaf crinkle, head & stalk rot & blotch virus in sun flower evaluated (7 intercropping systems, 8 biorationals tested & 10 cultural practices)

2.3 Sunflower samples collected from 8 locations; 10 elite lines inoculated with isolates in the screen house & in the field; Pathogenicity of the isolates evaluated at 10 TVCs'

3. 1 The compatibility of sunflower with other crops evaluated using 3 trials; 6 promising intercropping patterns tested at 4 TVCs' & 4 promising intercropping patterns tested in farmers fields

4.1 3 tons of new sunflower varieties produced; over 130 farmers trained on improved management practices

4.2 20 information sharing methods tested with 16 famers & 6 information sharing methods suitable for different farmer groups popularized .

Cumulative Outputs Achieved by the end of the Quarter:

Biotechnology

•90 planted in early evaluation trial (EET) on the earlier planted (250 genotypes) at NARL

•Planted the 5 matooke hybrids in Nakifuma, Mukono District on 20 farms

•Planted 12 new matooke hybrids in PYT in Kawanda

•6 cell lines of Gonja, 5 cell lines of Mpologoma, 4 cell lines of M9 were generated

•Maintained transgenic plants with Xanthomonas and nematodes

•Maintained 60 lines with nematode and weevil resistance were

Vote: 142 National Agricultural Research Organisation

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Vote Function: 0151 Agricultural Research

Development Projects

Project 0382 Support for NARO

planted in a Confined field trial.

NaCRRRI

Sweet potatoes

- Collected 35,000.OP and 1500 specific crosses seed.
- Planted breeding trials (55 clones) Planted breeding trials and established multiplication field for breeders seed at NaCRRRI
- Conducted agronomic evaluation of all 53 F1s in the screen house
- Performed DAS-ELISA for protein quantification in transgenic F1s roots
- Successfully regenerated Kyebandula and Bwanjule and transformed cv. Kyebandula with weevil-resistance genes

NAFORRI

- 1)Investment analysis of plantation forestry for improved profitability and livelihood analysis showed a Basal Area of 13.98m²/ha, Standing volume of 44.5m³/ha and a MAI of 8.9m³/ha/yr for PCH of 5 years.
- 2)Investment efficiency of commercial plantation species showed that a profit of 5,110,800 UGX and 12,584,000 UGX per ha for Pine and Eucalyptus respectively. In Uganda, input data collected included cost of land, labour, farm implements and seedling. Outputs were sales from thinnings, and final harvests for the case of eucalyptus. Preliminary analysis for a period of 10 years, shows a profit of 5,110,800 ugx and 12,584,000 ugx per ha for pine and eucalyptus respectively

NARL

Agricultural Engineering

Water provision and management

- Two ponds constructed for diffuser prototype aerator at Namalere
- Assessment of potential for rainwater harvesting and irrigation development in Kaabong District under AEATREC-FAO partnership was completed

NASARRI

- 1)Pix and Supergrow were tested on cotton at 1 and 2 litres/ha, applied once or twice. Doubling the rate or increasing the frequency were not advantageous. Application of Pix at 1 l/ha increased seed cotton yields to 1564.5 kg/ha from 1406.7 for the control, ie 11.2%; while Supergrow increased yields to 1711.1 (21.6%).
- 2)The foliar fertilizers tested had varied effects on cotton yields. Biophos, BioZinc, New Suryamine, Biopotash and Megacole increased seed cotton yields by 3.0, 6.0, 6.9, 7.4 and 14% respectively when applied four times. Push reduced yields by 3.6% as compared to the no fertilizer controls.
- The following predators were observed: Hoima:Lady bird beetles(Lbb),spiders, lacewings, orius spp,hover flies, earwigs, rove beetles Pallisa:Spiders,orius spp praying mantis, Lbb, lacewings. Lira: hover flies,Lbb, spiders Gulu:spiders orius spp,lacewing, Lbb Kasese: Lbb, spiders, hover flies, earwigs, rove beetle

BUGINYANYA ZARDI

- Promising effective crop rotation patterns for management of potato BW; 0.2ha of land at Bulegeni were prepared for the second round of rotation crops. The nursery of Kale and Cabbage was set

Bulindi ZARDI

- 3)Appropriate trees and shrubs for bee forage were characterized in 2 districts of Mid Western zone. These included vernonia amygdalina

Vote: 142 National Agricultural Research Organisation

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US\$ Thousand

Vote Function: 0151 Agricultural Research

Development Projects

Project 0382 Support for NARO

in Miriya, in Pakanyi the most common bee forage plant was *Mangifera indica*, in Kimengo subcounty, *Mangifera indica* and *Combretum collinum* were the most common bee forage species

KACHWEKANO ZARDI

•Generation of information on yield of the selected potato genotypes at different on-farm sites: Harvesting of on-farm potato genotypes was conducted and yield ranged from 17-26 T/ha with genotype 396038.107 yielding the highest at 26T/ha. Eleven on-farm trial were established in western and eastern region of Uganda

•On-farm evaluation of candidate sorghum cultivars for adaptability in the SWHAEZ: On farm trials were established in Kamwezi, Bubare and Kamugagunzi sub-counties. Five promising varieties were planted namely, E1291, S87, BM 27, and two locally grown varieties Abaresha and Kyatanombe as local checks. A total of 18 farmers are participating in the trials. In another set, candidate varieties HLSO/3/016, HSLO/3/17, HSLO/3/023 and Abaresha and Kyatanombe as local varieties were planted

Nabuin ZARDI

4)Compiled a report on farming systems and livelihood in Nakapiripirit district, Moruita, Kakamongole and Namalu sub-counties. Preliminary results show the farming system of the sub-region tends to the alluvial wet zone suitable for legumes, gramineae and tubers. Coping strategies and livelihood assests in Amudat gives a good outlook for the food security status in the area.

Q2

- Research activities effectively supervised, monitored in 2 PARIs.
- General monitoring of NARO land in 9 PARIs.

Research priority setting guidelines reviewed and first draft ready for harmonisation with NAADS.

Reasons for Variation in performance

Funds released in this quarter were not sufficient

Total	294,804
<i>GoU Development</i>	294,804
<i>External Financing</i>	0
<i>NTR</i>	0

Output: 01 5102 Research extension interface promoted and strengthened

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
NAROSEC:	221005 Hire of Venue (chairs, projector etc)	113,979
	221008 Computer Supplies and IT Services	23,038
	227001 Travel Inland	175,901
MIS institutionalized and Infrastructure established		
Research-extension interface activities in the PARIs effectively implemented supervised, monitored and managed		
Research-extension interface activities in the PARIs effectively implemented supervised, monitored and managed.		
PR:		
Branding initiative/campaigns strengthened		
Branding initiative/campaigns strengthened		
Publications & productions strengthened.		
Publications & productions strengthened		

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

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Vote Function: 0151 Agricultural Research

Development Projects

Project 0382 Support for NARO

Publications & productions strengthened
External public relations strengthened with different stakeholders.

UJAS editorial committee meetings facilitated;

DG's office:

Membership to vital clubs
Good governance and corporate social responsibility ensured and promoted
NARO-NAADS collaboration activities promoted
Sufficient funds for agricultural research mobilized and disbursed.

ACCOUNTS:

Timely Financial Budgets.

Better functional performance

Better Co-ordinated functions

ABI

Capacity of farmers and extension staff to manage and improve soil fertility built.

BuGIZARDI

4.2: 120 farmers capacity to produce own quality seed potato enhanced by using SSPT from Kween, Sironko and Manafwa

7.3: High quality disease resistant groundnut lines identified for release Iganga, Kamuli, Palisa, Mayuge, Busia districts

Farmers capacity to identify and manage major emerging pests and diseases of cassava and groundnuts enhanced.

BuZARDI

Institutional mechanisms that promote farmer innovations and technology adoption promoted.

MbaZARDI

A range of technology innovations for improving productivity of the farming systems and farmers livelihood tested

Generated information Disseminated to uptake pathways
Information on activities in the SWAEZ collected
Partnership visits to sister institutes & partner organizations conducted
Conducting radio programmes/features and Television Documentaries on MbaZARDI research activities & products

Printing of MbaZARDI Calenders

Vote: 142 National Agricultural Research Organisation

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Vote Function: 0151 Agricultural Research

Development Projects

Project 0382 Support for NARO

2. Generated information disseminated to uptake pathways
Farmers trained in technology management and marketing.

MuZARDI

At least 8 new technologies identified for zonal adaptation
Monitor the existing on-farm trials & establish at least 18 new on-farm trials in at least 3 districts

At least 5 new research technology interventions available in at least 3 districts

At least 5 stakeholder workshops on promotion and dissemination of technologies for integrating crops, agroforestry, apiculture and livestock enterprises for improvement of soil/crop productivity in the zone

At least 3 information sharing and training workshops stakeholders in agricultural research and development conducted in 3 districts

At least 1 semi annual and one annual review and planning meetings held

At least 1680 litres of diesel fuel procured

Contribution to at least 2 magazines, NARO year planner, publishing of at least 4 newspaper articles and production of 160 copies of MUZARDI

Newsletter

NGETTA

Knowledge and skills of farmers in Amuru district in appropriate labour saving technologies and practices enhanced.

Information on propagation and post-harvest handling of Shea nut disseminated to beneficiaries.

Information on incidence and severity of simsim pests and diseases in Lira and Alebtong districts generated.

NALIRRI:

Feedback and review meetings conducted involving extension staff of local governments and NGOs

Dissemination of findings in conferences

Information on MNB disseminated to stakeholders.

NACRRI:

IPM packages for management of BBW and other pests developed and promoted

At least 50,000 leaflets, 5,000 coffee calendars developed and promoted

Promotional materials including brochures, leaflets, posters developed, produced and circulated

Stakeholders capacities enhanced through training and awareness created

Demonstrations and field days set up and awareness about improved bean production technologies increased/improved.

Demonstrations set up

Community of farmer groups registered and schools involved in seed

production

Opinion leader sensitized.

NAFIRRI:

2. Technical report on mapping and database of aquaculture produced and results disseminated.

Cumulative Outputs Achieved by the end of the Quarter:

- Conducted two national MSIP TOT training workshop.

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

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Vote Function: 0151 Agricultural Research

Development Projects

Project 0382 Support for NARO

Q3

- Conducted a joint NARO-NAADS MSIP planning meeting
- Conducted the first national TOT training workshop.

Q2

- Updated the NARO website with a conference module. NARO 2013 calendars and diaries.
- Organised World food day
- Participated in organizing the Jinja agricultural show.

Q1

- Prepared demonstration gardens and information materials to Demonstrate research technologies for farmer adoption & displayed information materials including posters, brochures, banners, and leaflets during the world Food Day in Mbarara ZARDI and Jinja agricultural show.
- Painted NARO exhibition hall at Jinja agricultural show for improved corporate image

Reasons for Variation in performance

Funds released were grossly inadequate to conduct all planned activities

Total	312,918
<i>GoU Development</i>	312,918
<i>External Financing</i>	0
<i>NTR</i>	0

Output: 01 5104 Agricultural research capacity strengthened

Annual Planned Outputs:	Item	Spent
NAROSEC:	211102 Contract Staff Salaries (Incl. Casuals, Temporary)	9,541
Consultancy fees paid	211103 Allowances	10,984
2. Good Governance and corporate social responsibility ensured and promoted; Leadership and oversight Management of agricultural research provided;	221001 Advertising and Public Relations	21,055
3. Staff recruited and staff training - (Local and International)	221002 Workshops and Seminars	90,400
4. Stationery and office consumables procured;	221003 Staff Training	105,660
5. Office equipment maintained;	221004 Recruitment Expenses	60,888
Postage and courier services used;	221006 Commissions and Related Charges	137,652
6. Vehicles serviced;	221009 Welfare and Entertainment	32,341
7. Office buildings maintained ;	221011 Printing, Stationery, Photocopying and Binding	9,352
8. Compound maintained ;	221012 Small Office Equipment	9,692
9. Maintain effective ICT facilities;	221014 Bank Charges and other Bank related costs	14,028
10. Subscription for internet paid.	221016 IFMS Recurrent Costs	46,907
HRA quarterly meeting held	222001 Telecommunications	4,011
Council, Management Committees and staff members sensitized.	222002 Postage and Courier	40,366
An automated records management system	222003 Information and Communications Technology	36,988
30) Organised archive management system	223004 Guard and Security services	24,283
Updating NARO Asset Register	223005 Electricity	5,611
Travel to institutes to carry out HR functions	223901 Rent (Produced Assets) to other govt. Units	17,222
	224002 General Supply of Goods and Services	305,366
	225001 Consultancy Services- Short-term	58,627
	226001 Insurances	78,881
	227001 Travel Inland	149,870
	227002 Travel Abroad	73,538

Vote: 142 National Agricultural Research Organisation

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Vote Function: 0151 Agricultural Research

Development Projects

Project 0382 Support for NARO

	227004 Fuel, Lubricants and Oils	116,902
	228001 Maintenance - Civil	156,468
	228002 Maintenance - Vehicles	113,546
	228003 Maintenance Machinery, Equipment and Furniture	32,488
	228004 Maintenance Other	7,640

ACCOUNTS:

12. Quarterly entity accounts, financial statements, commitment control reports, several manual books of accounts maintained. Bank charges timely paid;

Better quality of accounting information.

Timely Financial Budgets

Effective financial Management system in accordance to GOU & Donor policies

Fully embrace the government business transactional procedures.

Accounts staff Development.

16. Acquisition of books, agric. Information magazines and newspapers;

17. Provision of security services;

18. Break tea and Refreshments provided to staff and visitors;

19. 3 Preparatory meetings for NARO Scientific Conference;

20. Organising NARO Scientific Conference;

21. 1 Annual planning and Review meetings;

22. 3 Quarterly planning and Review meetings;

23. 2 Dissemination and Internal review workshops;

Sensitised PARIs on Institutionalisation of Quality Assurance in NARS

Build capacity of selected staff on Web 2.0 Tools.

Policies implemented and adopted

New performance appraisal instrument developed printed and circulated

Improved staff wellbeing

Building plans produced

Research activities effectively supervised, monitored and managed

Consultancy Services

IFMS Recurrent costs.

Budgets/workplan prepared, management, monitoring & evaluation reports.

Accounts information/reports generated and reviewed, analysed and distributed.

Internal Audit out-puts:

Internal Controls reviewed and key risks controlled.

Adherence to laid down regulations and policies.

Minimized cases of disagreements with auditors and management arising from their reports.

Payroll embracing all NARO staff audited.

Proper accountability of resources and correct recording of transactions.

Internal audit work conducted professionally at Institutes

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

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Vote Function: 0151 Agricultural Research

Development Projects

Project 0382 Support for NARO

Losses/fraud minimized.

Updated asset register verified as per the physical Items and Cash controls strengthened.

Independence of Internal Auditors strengthened.

Improved accountability.

Internal Auditors Capacity strengthened

Internal Auditors capacity improved.

Governance and corruption issues identified.

Engineering dept out-puts:

Good engineering structures ensured

Efficient service delivery

Building plans produced

Improvement of Sewerage infrastructure

improved kitchen facility for staff tea

improved quality laboratory

Structural integrity of Office building restored

Aesthetically pleasing environment

Enhanced knowledge and better equipped staff

Enhanced knowledge and better equipped staff

Improvement of other works infrastructure

ABI

New ideas and information acquired

Improved performance of the institute workforce

Vacant positions in the establishment filled

Fuel supply maintained for administrative activities

Institute buildings maintained

Institute vehicles maintained

Institute reports effectively produced.

BugiZARDI

2 farmer groups involved in identification of ITK and goat feeding options validated in Bukwo, Kapchworu, Bulambuli and Mbale districts

10.3: Capacity of the farmers in profitable management of goats in the selected districts enhanced.

Efficient implementations of farm and office operations

Vote: 142 National Agricultural Research Organisation

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Vote Function: 0151 Agricultural Research

Development Projects

Project 0382 Support for NARO

Improved communication and services

Institute property secured .

BuZARDI

Mechanisms for efficient institutional management strengthened.

KaZARDI

4 quarterly planning meetings held

At least 2 staff participating in various administrative meetings/ activities

4 staff participating in finance, audit, human resource and procurement workshops

1 stakeholders planning meeting held

Human Resource & administrative, and Audit reports prepared and submitted to NAROSEC

2 quarterly monitoring of research & development activities and value for money and audit activities

12 monthly financial reports compiled and delivered to NAROSEC

4 quarterly Management Committee and 2 sub-committee meetings held

6 procurement sub-contracts committee meetings held

Generators for research activities maintained.

Generators for research activities maintained.

Vehicles for research and administration activities maintained

Welfare items available for staff

1 end of year gathering organized.

MbaZARDI

Facilitation of Management Committee meetings

6 monthly hired labour contracts paid by June 2012

Human resource development

6 guarding invoices paid by June 2013

Procurement of internet services

Meetings and other administrative matters attended by director

Assets engraved.

MuZARDI

At least 8 MC meetings held

Staff recruitment

At least 4 budget meetings held

At least 3 visits by members of staff to other NARO institutes

Members of staff participate in at least 1 agricultural shows & 1 one field day

At least 8 members of staff attend local training courses

No. of conferences and seminars attended for capacity building

At least one annual event for staff motivation held

At least one farmer exchange visit for 30 farmers conducted

Assorted stationery procured

At least 1 potting shed renovated

At least one hatchery unit renovated

At least 20 security lights installed

At least one main hall tiled

At least 1 staff office block renovated

Stores renovations.

NabuZARDI

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs <i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Development Projects

Project 0382 Support for NARO

Funds to suplliment Institute budget generated
Funds to suplliment Institute budget generated from hiring out chairs and tents.

Efficient and effective decision making for proper managemnt of Nabuin

Procurement reports submitted on time as required by world bank & PPDA .

Financial policy guidelines & review of the existing ones to stregthen the system designed
Routine support of administrative & research activities made Necessary services from other service providers like banks provided.

Materials needed for report writing & other office use in place.

Office space for staff acquired in Moroto .

NGETTA

Equipment for tree mensuration acquired
Mandate and functions of management committee effectively exercised.

Motor cycles for research activities in good working condition.
Uninterrupted internet connection.
Stationary available for office use.
Ngetta ZARDI GoU-Devt bank account operational.
Capacity of staff in research and research management enhanced.
Ngetta ZARDI physical facilities in good condition.

Research capacity strengthened.

RwebiZARDI

At least 4 Management committee meetings held at the institute .

- Improved reporting.

NaLIRRI:

A well planned, supervised and co-rdinated system achieved
Office, laboratories, access roads and compound mentained
Capacity building through short term training of staff achieved
Supply of utilities to the Institute achieved
Various coordination activities including attending workshops and meetings executed .

NARL:

Providing oversight of research activities
Providing oversight of research activities.

NaCRRI:

At least 5 COREC staff members undergo specialised cources (training in Project management, ICT and Laboratory procedures)
Well maintained compounds and roads for a good working enviroment
2 Staff Recruited in finance and audit units
Establishment of Policy guidelines, recommendations & review

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

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Vote Function: 0151 Agricultural Research

Development Projects

Project 0382 Support for NARO

Representation/Attendance of Official Meetings
 Activities in 8 Trial sites in COREC Bugusege & Kiige are carried according to Plan
 Constant /Uninterrupted Flow of Communication

Well maintained and functional information processing system
 A well maintained and functional telephone network for NaCRRI
 A well motivated staff to ensure efficient and effective performance
 A well motivated staff with working tools to ensure efficient and effective performance
 Institute Assets protected from thieves & Vandalisation
 At least 80% of NaCRRI vehicle are functional to ensure easy transported and activities
 All parts of NaCRRI is accessible and have sanitation facility
 Institute Assets protected from thieves & Vandalisation
 Office buildings maintained to provide good working condition.

NaFIRRI:

Staff capacity enhanced to respond to challenging research environment
 Research dissemination materials (calendars, t-shirts, christmas cards) produced and distributed
 Timely communication and follow-up on institute activities
 At least one capture fisheries and two aquaculture technologies developed and disseminated.

Executed routine administrative duties
 At least one capture fisheries and two aquaculture technologies developed and disseminated
 Executed routine administrative duties
 Well maintained office infrastructure
 At least 10 vehicles maintained
 At least 10 functional outboard engines and one welding generator
 Workshop machinery maintained
 Research outputs disseminated to stakeholders:

NaSARRI:

Executed routine administrative duties
 At least one capture fisheries and two aquaculture technologies developed and disseminated
 Executed routine administrative duties
 Well maintained office infrastructure
 At least 10 vehicles maintained
 At least 10 functional outboard engines and one welding generator
 Workshop machinery maintained
 Research outputs disseminated to stakeholders.

Cumulative Outputs Achieved by the end of the Quarter:

- UJAS Vol 13 (2) published
- NARO science committee facilitated
- 3 vehicles at the secretariat and 14 vehicles maintained
- The first preparatory meetings for NARO Scientific Conference - 2014;
- MTP review meeting held
- Scientist performance evaluation meeting organised.

Q2

- Organised and held the NARO scientific conference.
- Published UJAS VOL. 13. NARO calendars and diaries.
- Conducted 2 M and E missions in the PARIs.

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

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US\$ Thousand

Vote Function: 0151 Agricultural Research

Development Projects

Project 0382 Support for NARO

- Updated the NARO website with a conference module.

-

Q1

NARO Secretariat

- NARO Council meeting held
- 2011/12 quarter IFR sent to world bank. 2nd Withdrawal Application made.

- Conducted 2 preparatory meetings of the NARO Scientific conference to be held in 1-3 October 2012.

- Conducted 1 M and E missions in the PARIs.

- Updated the NARO website

- Review Harmonizing the Priority Setting guidelines NARO

PUBLIC RELATIONS

- Draft NARO communications strategy developed
- Arranged for 10 journalists to visit NaCRRI during the Second Global Cassava Partnership Conference (GCPII) in Kampala

Reasons for Variation in performance

Funds released were grossly inadequate to conduct all planned activities

Total	1,770,306
<i>GoU Development</i>	<i>1,770,306</i>
<i>External Financing</i>	<i>0</i>
<i>NTR</i>	<i>0</i>

Output: 01 5105 Generation of technologies for priority commodities

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
Released and near release bean varieties produced and maintained, Stress tolerant / resistant bean genotypes identified and incidence & severity of major bean pests & diseases determined Stress tolerant maize varieties released, released maize varieties purified, pests & diseases yield loss determined Cassava lines resistant to stress with desirable attributes released, Virus disease maps generated, Early warning systems developed, nutrient-use-efficiencies of elite cassava genotypes determined Stress tolerant rice varieties released, released rice varieties purified, pests & diseases yield loss determined & performance of new upland and rain fed low land rice lines determined Coffee varieties with high yields, resistant to stress developed, Technologies for control of pests and diseases developed and Effective soil fertility and water management options developed Information on best agronomic practices generated and availed, Extent of pest infestation in tea growing areas determined & management options of major pests developed Effective soil fertility and water management options for new varieties and non-traditional areas developed Banana hybrids tolerance stress, high yielding and with consumer acceptable qualities generated and technologies that enhance the banana value chain developed and promoted Develop technology options for exploitation of renewable energy resources, irrigation schedules established Develop technology options for water provision and management Fish diversity, Reproductive Ecology and Improvement of Genetics and Culture Practices of Commercial value fishes Tse-tse fly and ticks management options, Forage management, Pest and disease management Tse-tse fly and ticks management options, Forage management, Apiary,	224001 Medical and Agricultural supplies	2,074,000

Vote: 142 National Agricultural Research Organisation

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Vote Function: 0151 Agricultural Research

Development Projects

Project 0382 Support for NARO

Livestock breeding and disease management
 Appropriate agronomic technologies that increase bean yields developed
 New cassava varieties resistant to CMD and CBSV; with other farmer-preferred attributes developed
 New rice varieties availed to farming communities and Farmers trained on recommended agronomic and post-harvesting techniques of rice
 High yielding forage cultivars disseminated, Performance of 5 cross breed calves determined, Concentrates for supp. feeding developed
 Aquaculture pond Productivity improved to at least 2.0 kg/m² for catfish and to 1.0 kg/m² of pond area
 Appropriate soil & water management interventions developed, Integrated nutrient management (INM) practices adopted by farmers in west Nile
 High quality maize varieties validated for production in the mid altitude areas of the SEAEZ
 High quality farmer preferred cassava varieties multiplied for uptake pathways in the mid altitude areas of the SEAEZ and Disease tolerant cassava varieties identified and validated
 Promising Integrated weed management options in rice validated with farmer groups
 Cost effective fungicide spray regimes identified for management of CBD, soil nutrient options that improve Arabica coffee productivity identified and coffee seeds and seedlings availed
 Soil and water conservation measures identified and Promoted, partnerships developed and strategies for adoption of SLM produced and sensitisations held
 High yielding and high quality rice varieties and lines for small scale farmers are selected, seed systems developed & disseminated
 Technologies for producing fish seed developed & Cage farming experiment studies set up in L. Albert
 Impacts of climate change determined, Drought tolerant disseminated & Animal feed species with high carbon sequestration popularised
 Limitations of fish breeding in the natural ecosystems & Environmental parameters on fish rearing established
 IPM options for beans developed and disseminated
 Nutrients limiting banana production on at least two different soil types in Isingiro district documented
 Appropriate method for control of FMD and ECF validated & documented and Extent of feed conservation determined & Methods used to conserve feed identified and evaluated
 FCR of farm made and commercial pellets of Jorda services and Ugachick on pond & caged determined
 At 1 coffee wilt disease tolerant variety disseminated in 4 districts by June 2013
 Agro forestry technologies for production and utilization of fodder adapted and disseminated in the zone
 Management & sustainable use of NR enhanced & Optimum application rate of *Metarhizium anisopliae* determined
 Highest yielding rice intercropping systems identified and samples analysed MSIP meeting conducted
 Effect of graded levels of protein on fish performance evaluated & farmed fish decision support tool developed
 Factors relating to adoption and management of small scale irrigation practices established
 Livestock management options developed, Technologies for water harvesting/harnessing and storage evaluated
 Livestock management options developed
 Labour saving animal drawn technologies catalogued and its efficacies established
 Technologies for water harvesting/harnessing and storage evaluated
 Improved/new varieties of rice adapted

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

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Vote Function: 0151 Agricultural Research

Development Projects

Project 0382 Support for NARO

Performance of 4 pasture species compared on-station & High yielding grass and legume pasture species adapted.

Optimum catfish & tilapia stocking ratios established, Performance of fish feeds documented and Feed rations/ regimes developed.

High yielding and quality tea planting materials developed, Tea germplasm preserved and Reaction of clones to tea pests & pests determined, high yielding and tolerant to Xylaria disease selected

Cumulative Outputs Achieved by the end of the Quarter:

NACRRI

Cassava

- Completed data collection, the harvested replanted draught tolerance and harvest the trial in Kasese, 6 genotypes selected for advancement to on farm trial
- Collected...seeds collected from the crossing blocks at Ngeta and Bulindi
- Established a seedling trial for diallel studies on β -carotene content established at Abii ZARDI with 2205
- Introduced 21 wild cassava relatives from Brazil or improving pest and disease resistance of Ugandan cassava germplasm, seedling nursery and established

NaFIRRI

Fish

- Geo-referenced map and database on trends and impacts (profitability and constraints) if fish farming to livelihoods in Central Uganda were generated for 90% (820 fish farmers). The output allows fish farmers and government to enhance profitability while intervention is moved to other regions.

Abi ZARDI

- Forage multiplication done at Zombo DFI for Napier(1/2 acre), Lablab (1/4 acre), Brachiaria spp, Rhodes grass, Centrosema pubescens and Mucuna (1/4 acre)

Beans

- Six adaptive trials were established containing 7 improved varieties of Bush beans (Nabe 1,6,11,12,13,14) and 4 improved varieties of climbing beans(NABE 10C,7C,9C,12C) in Moyo, Maracha, Arua, Zombo

Buginyanya ZARDI

- 2-One goat unit housing 20 bucks renovated to control breeding
- 0.7ha of Chloris gayana pasture established for seed multiplication at Bulegeni station
- 13ha of coffee seed gardens at Buginyanya and Bulegeni stations at hard green stage

Bulindi ZARDI

- Maintained of cassava spacing trial, Collected data on parameters such as plant height and incidence of pests and diseases to identify an optimum and cost effective population density for adapted cassava cultivars in LACZ of Uganda
- 48 acres of adapted cassava (NASE 14) planting stock maintained onstation to produce 2,304,000 cuttings of cassava to be availed to farmers for increased productivity of cassava in the LACZ of Uganda

Mbarara ZARDI

Banana

- One on station experiment on nutrient limiting set up. There are 8 on farm trials in Ibanda and Isingiro districts.

Vote: 142 National Agricultural Research Organisation

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Vote Function: 0151 Agricultural Research

Development Projects

Project 0382 Support for NARO

Livestock

- On-farm disease epidemiological data collected from 700 farms in 10 districts

Cassava

- Maintenance of 4 acres of cassava

Mukono ZARDI

- A rice market chain actors from the districts of Luwero, Kayunga and Kiboga is being established
- 1 Acre of rice (NERICA 1 and NERICA 10) planted for seed multiplication.

Maize

- 2 acres of maize planted (Longe 6H, Longe 7H and Longe 10H)

Cassava

- 4 acres of 4271 cassava planted.

NABUIN ZARDI

- Maintained 18 acres of NASE 14 cassava. Planted 1 acre of 3 new CBSD resistant cultivars, 4 more acres of NASE 14 in Nabuin and opened up and planted 10 acres of NASE 14 in Apeitolim, Napak district. Maintained 18 acres of MM/96/4271 cassava.

Ngetta ZARDI

- 10 acres under cassava (variety 4271) have been maintained for seed multiplication on-station
- Planted five on-farms and two on station trials for participatory evaluation of performance of six CBSD tolerant cassava varieties in different locations within the NAEZ. (NASE 14-19)
- Information on CBSD disseminated to 715 farmer group representatives and 25 extension workers in Amuru, Gulu and Agago districts
- 6 on-farm and 2 on-station adaptive trials of 5 CBSD tolerant varieties maintained and 2nd data collection done in Amolatar, Lamwo, Gulu, Otuke, Nwoya, and Agago districts.
- Collecting data and maintaining on-farm IPDM evaluation sites in each of the districts of Nwoya, Amolatar, Kole, Alebtong, Pader, Gulu and Oyam districts.

Rice

- Set up 2 on station trials to evaluate performance of 3 rice varieties under different weed management conditions.
- Established a trial on-station to evaluate rice performance at different fertilizer levels of N,P,K

Bean

- Set up 2 on station trials to evaluate performance of 4 bean varieties under different weed management conditions
- Set up 1 on station experiment to evaluate plant population in conservation farming basins.

Livestock and Fodder

- 3 trials for growth x-tics evaluation of Pigeon peas, Napier and Lablab and 3 fodder banks(Napier, Bracharia and Lablab) were established and maintained on-station and data collection was done.

Fish

- Three 675sq.m ponds constructed and six old ponds maintained

Rwebitaba ZARDI

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

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Vote Function: 0151 Agricultural Research

Development Projects

Project 0382 Support for NARO

Tea

•8,740 planting materials of high quality tea clones raised in the nursery. 6 high yielding clones identified for scion collection. Tea gene bank maintained. 20 tea fields and two mother gardens maintained. Data collection tools for a profitability index study of tea production in Kyenjojo district were pre-tested in the district

Rice

•Three (3) acres of upland rice (NERICA 1, 4 and 10)

Livestock and fodder

•One pasture album of 15 fodder species maintained on-station
•Initiated an on-station propagation of Brucharia fodder species

cassava

•20 acres of cassava (Nase 13- 4271 variety) maintained on-station. Monitored cassava adaptive research trials in Bundibugyo and Ntoroko districts. 40 acres of cassava (NASE 14 variety) established on-station.

Banana

•Maintained 10-acre field for multiplication of 10 improved banana varieties
2. Maize as a non-host crop in destroyed banana site maintained (weeding and pest and disease management)

Fish

•Three ponds of 10 m x 20 m dimension constructed in the pond area
Research extension interface strengthened

Abi ZARDI

•2 acres of land opened for multiplication of selected varieties of maize and sorghum

Buginyanya

•Cassava curriculum developed with 30 members of the FFS in Magoola s/c, Tororo district

Mukono ZARDI

•Organized 2 radio programmes on Bukedde & Buddu FM radios.

Nabuin ZARDI

•Information and skills on animal traction was disseminated to 46 trainers who included (farmers and NAADs service providers of Abim, Kotido, Katakwi and Pallam districts

Mukono ZARDI

•290 banana suckers uprooted, prepared and availed to farmers of Buikwe
•Maintenance of new banana mother garden and on- station Banana demonstration garden.

Ngetta ZARDI

cassava

•10 acres under cassava (variety 4271) have been maintained for seed multiplication on-station

Q3

NaCRRRI

Characterization of Core Robusta and Arabica coffee germplasm:

Vote: 142 National Agricultural Research Organisation

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Vote Function: 0151 Agricultural Research

Development Projects

Project 0382 Support for NARO

- Profiled yield and disease resistance of 14 clones and 1 open pollinated Ivorian Robusta coffee germplasm
- Profiled yield and disease resistance of 213 CWD resistant Ugandan Robusta germplasm and 49 Arabica introductions

Beans

- Four (4) beans were selected and recommended for DUS trials

Maize QPM (technology dissemination)

- Planted 49 inbred lines for 3rd season aflatoxin screening

Tea

Development of improved soil fertility management technologies for tea:

- Of the sites identified for soil fertility trials for tea, 70 % were not applying any fertilizers because of allegedly high cost. This has led to framers renting their tea to tea company some of which are not being maintained. Soil samples were taken to determine pre-experiment soil fertility status

NaFIRRI

3)The database on aquaculture farms has been updated with geo referenced information from 73 fish farms in Kiboga, Kibale, Masaka, Kibale, Masaka, Mubende & Mityana districts.

4)A draft technical report on suitability for fish cage culture in the islands of Bugala, Kome and Damba and Namusenyi bay was compiled.

Bananas

- Five promising hybrids selected for on- farmer evaluation; 200 plantlets of 5 selected clones multiplied and will be ready for distribution in 1 month. Twenty farmers have been selected for the evaluation in Wakiso and Luwero districts
- Establishment of Preliminary Yield Trials (PYT) of 17 hybrids on-station; multiplication of hybrids in tissue culture laboratory started

NASARRI

- Grain yield performance data was collected and analyzed . 8 out of the 44 forage lines showed superior yield performance.
- 44 forage sorghum accessions were screened for resistance to major insect pests at NaSARRI 33 of the accessions showed resistance to shoot fly and 9 showed resistance to stem borers. Additional data on grain yield and other agronomic parameters were collected.
- 24 BC3 forage sorghum lines were bulked and advanced to BC4 and 13 BC2 were also bulked and advanced to BC3 .Grain yield data were collected on the segregating populations.
- 9 demonstrations of forage sorghum established in two sub counties (Gweri and Arapai) Soroti District and 6 more demonstrations were planted in Katakwi District. preliminary data on farmer perceptions of forage sorghum lines were collected in Kumi and Soroti districts.
- 120 germplasm from ICRISAT Malawi were screened under natural infestation (diseases & pests) yield and maturity 70 promising lines were preliminary identified with good attributes

Abi ZARDI

- One comprehensive data set collected showing CBSD on Joyo (one of the 18 local cassava varieties) at Rhino Camp
- Average weight of Catfish at harvest was in range 800g to 1000g

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

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Vote Function: 0151 Agricultural Research

Development Projects

Project 0382 Support for NARO

using feed containing 30% Crude Protein for one year and survival rate was 90% with FCR ranging from 0.9 to 1.2 for the first six months of culture

- Preliminary results on agronomic studies on Longe 4 can yield up to 1674 kg/ha, Longe 5 up to 1440 kg/ha and MM3 up to 1542 kg/ha under proper agronomic management and rain fed conditions and no nutrient supplement. Need more studies for concrete recommendations

BUGINYANYA ZARDI

- Assessment of on-farm efficacy of fungicides against CBD; 4 sites for Fungicide trials selected in districts of Kapchorwa (Kabum), Bulambuli --(Bumugibole) Sironko --(Bumasifa) Bududa (Bukigayi) and a joint activity plan developed

- Partnered with Kabum coffee to assess soil health of coffee farms in Kapchorwa and Kween district. Data on status of soil nutrients of coffee being collected in Kapchorwa and Kween districts

- Performance of coffee seed gardens at flowering stage at Buginyanya and Bulegeni: Pest (antestia bugs) incidence recorded at 15% and 5% incidence of coffee leaf rust recorded at flowering in Feb 2013

KACHWEKANO ZARDI

- Forage legumes for soil fertility (Sorghum): Preliminary results reveal a yield response of 10, 8.5 and 6.3 tonnes/ha from the treatments of Mukuna, Lablab and control respectively. The second season experiment was planted.

Nabuin ZARDI

5)A technical report on appropriate control methods for ticks and tick borne diseases and helminths in cattle was compiled. The report reveals that in Kotido and Nakapiripirit districts, Boophilus and Rhipicephalus ticks showed resistance to cypermethrins, emerging resistance to organophosphate and susceptibility to amitraz acaricides

- Livestock markets in Kotido were mapped and two trade routes to neighbouring districts of Koboong and Abim.

6)Compiled a report on farming systems and livelihood in Nakapiripirit district, Moruita, Kakamongole and Namalu sub-counties. Preliminary results show the farming system of the sub-region tends to the alluvial wet zone suitable for legumes, gramineae and tubers. Coping strategies and livelihood assesses in Amudat gives a good outlook for the food security status in the area.

Rwebitaba ZARDI

- Tea nursery site rehabilitation completed. 8,740 tea seedlings are ready for planting.

- Tea mother gardens maintained & 6 high yielding clones identified for scion collection

- Napier grass band established in 3-acre banana evaluation trial for soil and water conservation

- 10 acres of farmland for dairy cattle were maintained

Q2

NACRRI

- * Maintenance of on station trial fields of Maize, Beans, coffee, cassava, rice

- * Maintenance of on station trial fields of Maize, Beans, coffee, cassava, rice

Tea

- * Conducted a survey on major tea pests and diseases in the western highlands

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

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Vote Function: 0151 Agricultural Research

Development Projects

Project 0382 Support for NARO

- * The major diseases found in Kanungu were *Armillaria mellea* and *Xylaria*
- * 20 tea fields (tea gene bank) maintained on-station at Rwebitaba

Fish

- * Three reconnaissance surveys were conducted in the inshore waters of the Ugandan part of Lake Victoria and geo-referenced data was captured for 157 grounds identified as potential fish breeding/nursery grounds.
- * Draft map outputs produced for the locations of fish breeding/nursery grounds in Lake Victoria.
- * In Abi ZARDI Preliminary results for feeding ecology indicates that *Alestes baremoze* feeds on a great diversity of food items with Ephemeroptera nymph dominating as the most prey item and photo period has an influence on stomach content fullness

Reasons for Variation in performance

Funds released were grossly inadequate to conduct all planned activities

Total	2,074,000
<i>GoU Development</i>	2,074,000
<i>External Financing</i>	0
<i>NTR</i>	0

Project 1138 EAAPP

Outputs Funded

Output: 01 5151 Payments to International Organisations (CGIAR, ASARECA, WARDA)

Annual Planned Outputs:	Item	Spent
n/a	264101 Contributions to Autonomous Inst.	345,000

Cumulative Outputs Achieved by the end of the Quarter:

Funds transferred to ASARECA and MAAIF for project activities

Reasons for Variation in performance

None

Total	345,000
<i>GoU Development</i>	0
<i>External Financing</i>	345,000
<i>NTR</i>	0

Outputs Provided

Output: 01 5101 Generation of agricultural technologies

Annual Planned Outputs:	Item	Spent
1.Information on cassava production to consumption continuum generated, disseminated and utilized	224001 Medical and Agricultural supplies	38,333
	224002 General Supply of Goods and Services	268,254

- 1.Knowledge on biology and ecology of pests and diseases increased .
- 2.Cassava varieties with desirable attributes developed.
- 3.Capacity for cassava tissue culture, genetic transformation and conservation systems developed.

Vote: 142 National Agricultural Research Organisation

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Vote Function: 0151 Agricultural Research

Development Projects

Project 1138 EAAPP

1. Knowledge on markets, profitability, adoption and impact of cassava technologies generated.
2. Knowledge on adaptability and tolerance of rice landraces to major pests and diseases generated
3. New rice genotypes with improved tolerance to rice blast and drought stress generated
4. Information on rice field management practices in RYMV prone areas catalogued
5. Information on rice field management practices in AfRGM prone areas catalogued
6. Information on economic importance of RYMV determined
7. Information on economic importance of AfRGM determined
8. Putative vectors of RYMV identified
9. Determine biotypes of AfRGM
10. Capacity of stakeholders who are active in use and maintenance of rice water harvesting and improved production mechanization increased
11. Appropriate AfRGM control package developed
12. Segregation populations arising from crosses of local materials and introductions generated
13. Promising wheat introductions with resistance to Ug99 identified
14. Promising introductions with heat and drought tolerance identified
15. Promising appropriate packages for production of Ug99 resistant wheat identified.
1. Technologies and innovations that enhance food safety, shelf life, and market value of cassava, rice, wheat and dairy based value added products, generated.
1. Technologies for management of environmental pollutants from cassava, wheat, rice and dairy value-addition processes developed
2. Increased availability of feed resources in smallholder dairy systems through utilization of Napier stunt tolerant varieties
3. Increased availability of feed resources in the smallholder dairy system through utilization of crop residues/wastes and agro-industrial by-products.
4. Improved control of ECF in small holder dairy farming system in Uganda
5. Improved detection and control of drug residues
6. Improved control of milk-borne zoonoses
7. Indigenous cattle with desirable dairy production traits identified
8. Genetic diversity of indigenous cattle assessed
9. Pedigree database created

Vote: 142 National Agricultural Research Organisation

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Vote Function: 0151 Agricultural Research

Development Projects

Project 1138 EAAPP

10. Pure breed exotic cattle selected and procured
11. Farmers trained on cattle breeding and improvement
12. Superior Indigenous cattle evaluated on-station and on-farm

13. Dairy Nucleus herds established

14. Capacity of NAGRC&DB Embryo Transfer (ET) unit built

15. 4 registry centres equipped with herd recording hardware and software (computers and accessories)
16. Farmers sensitised on national breeding plan and guidelines
17. Dairy breeders selected
18. Dairy breeders certified and registered
19. Capacity built for breeding activities.

20. Breeding activities regulated
21. Seed Companies technically assisted .

22. Breeder seed in public research institutes multiplied (ZARDIS)
23. Production of seed/planting materials of cassava, rice, wheat and pastures among farmers' groups supported (NAADS)
24. Seed Entrepreneurs given skills on development of business plans

25. Seed enterprises established
26. Rural networks of seed and other agro-inputs established
27. Studies on policy dialogue with relevant government agencies performed

28. Seed policy awareness created
29. PVP regulations put in place
30. Seed Regulations awareness created
31. Plant protection and Health awareness created
32. Strategy and action plan for control of CBSD put in place
33. Government labs strengthened .

34. Seed Inspectorate strengthened

35. Variety Testing Unit strengthened.

36. National, regional and International Seed collaboration/ networks strengthened.

37. Logistical/operation support provided.

Cumulative Outputs Achieved by the end of the Quarter:

Cassava, RCOE

- 8079 F1 seeds/clones generated among 23 parents categorised as resistant/tolerant to CMD and CBSD. 9413 F1 seeds/clones generated among from 15 parents differing in beta carotene and virus resistance. 9413 F1 seeds/clones generated among from 15 parents differing in beta carotene and virus resistance
- 10 isolates tested using 6 primer pairs. Out of the 6 primers, 2 pairs identified for future screening
- Magnitude of cassava yield loss due to CBSD computed for 4 genotypes. Final response of 27 clones to CBSD determined and data analysed. MM 06/0130, NAM/130, MH04/300 identified as tolerant.

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs <i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Development Projects

Project 1138 EAAPP

- Adequate population of bio-agents multiplied and distributed to contain resurgence of CM and CGM
- Indigenous whitefly bioagents Parasitoids collected
- Initiated thermotherapy plans with NRI & MUARIK
- Finalized plans to Hire an anthropology to guide in development of the final tools and train the team in data collection, coding and analysis
- Successfully initiated genotypes TME14, BAO, Alado Alado, NASE 2 and NASE 12 using meristem-tip culture

Dairy Research

- A decision support tool for optimizing forage utilization in smallholder dairy systems completed
 - 20 ha of forage seed established at NaLIRRI, NaCCRI and Masaka , Wakiso & Mbarara
 - 6.75 ha of assorted grasses established at NaCCRI -3ha of Brachiaria hybrid cv. Mulato established in Wakiso and Masaka.
 - 200 kg of Chloris gayana produced
 - Cross sectional qualitative survey conducted in Buikwe, Jinja and Mayuge
 - 560 blood samples from agro-ecological zones were analyzed for genomic DNA and 129 of which were positives for T. parva. Prevalence of T. parva in Uganda (23%) has been determined
 - A map on occurrence of Amblyomma tick in Uganda has been developed
 - 170 cows synchronized and artificially inseminated from 105 household herds out of a total of 243 cows from 127 household herds examined
 - Evaluation of 15 SEA Zebu cattle from Kaliro and 18 Sahiwal crossbred heifer transferred from NaSARRI started at NaLIRRI
- #### Wheat research
- 750 lots of M2 selected for further evaluation and bulking
 - 30Kg of seed of 19 uniform local collections available for characterization in Kween, Bukwo and Kapchorwa
 - 9 lines yielding 2.5t/ha and disease resistant at AYT; 20 introductions including 8 Kenyan varieties at PYT2 in 4 locations
 - 5 wheat lines identified for Multi locational trials towards release at Buginyanya, Kween, Bukwo and Kalengyere
 - 60Kg N, 50Kg P rate of DAP give 45% increase in wheat yield when applied to elite variety UW400
 - 24Kg of 8 Kenyan wheat varieties multiplied for yield trials, 120Kg of Elite variety UW400
 - 7 wheat lines identified for advanced yield trials at Buginyanya, Kween, Bukwo and Kalengyere
 - 32 wheat lines of 59 identified for Preliminary yield trial 2 at Buginyanya, Kween, Bukwo and Kalengyere

Rice research

- A total of 1700 germplasm were collected to conduct trials for tolerance to drought. All 300 lines were screened on-station for resistance/tolerance to drought and 15 promising were identified.
- Two species of parasitoids identified associated with AfRGM *Platygaster diplosisae* and *Aprostocetus procerae* have been identified.
- Rice innovation platform for western and Eastern zone developed in conjunction with NAADS
- Draft paper produced on options for AfRGM management practices
- A walking harvester modified at NARL that harvest 1 acre per hour with a fuel consumption of 1L per acre was tested in 8 fields. The overall cost of hire of the harvesting is about 30,000/=per acre

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs <i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Development Projects

Project 1138 EAAPP

- Harvesting manually varies with field terrain, yield, soil moisture and weed status. Generally an average of 80,000/= is charged for harvesting hectare.
- A diesel engine thresher modified at NARL was tested in 4 rice fields. The threshing capacity was found to be 500kg per hour with fuel consumption of 1.2L per acre. The overall cost of hire of the thresher is about 20,000/=. Threshing is charged 68,000/= per acre. This rate is adjusted upwards if the yield is considered to be very high.
- RYMV incidence and severity was determined. It was highest in Serere (4.6) and lowest in Busia (0.80) however RYMV incidence levels ranged from 90 % in Butaleja to as low as 15 % in Busia.

Value addition

- Performance evaluation of a food grade material chipper model initiated: mean chipping efficiency = 78% (target 95); rate of cassava chipping /Capacity = 376-kg/hr
- storage and packaging options were determined Using the metallic silo, product moisture content was maintained at 11% & no microbial contamination were detected. The hermetic metal silo performed best. Most damaged products were those stored in the gunny bag material
- Presented cassava-based starch for industrial testing by East African Packaging industries; and Uganda Pulp & paper Industry.
- Variety Plus Uganda – is developing & market testing enriched cassava products - flours & confectionery (incubatees at NARL)
- AgriBiz Internet Marketing Portal - is linking cassava processors, farmers and buyers through an agri-business portal (incubatee at NARL)
- Preriminary results show poor product qualities (high water activity; moisture content; sandiness; non-freshness; discolouration among others)

Q3

Cassava RCOE

- F1 botanical seeds have been harvested from the crossing made among the 23 CMD resistant and/or CBSD tolerant lines.
- Harvested the S2 sexual seeds from the crossing block having beta-carotene S1 inbred
- Harvested the F1 botanical seeds from the crossing block having (10 beta carotene and 5 white-fleshed cassava lines).
- 840 isolates collected, DNA /RNA extracted, live cultures maintained for further characterization.
- 10 isolates tested using 6 primer pairs for future sequencing
- DNA extracted from 70 whiteflies and PCR analysis done.
- Live cultures of U/CBSV established in screen house. Transmission studies will be studied for 3 species of white fly.
- Phytoseidfor CGM control recovered from 5 out of 9 improved cassava varieties encountered during surveys in 3 agro ecological zones
- Survey on major cassava diseases and pests conducted in 30 out of the 40 districts planned for the 2013a
- Database with Weather & pest and disease designed
- Draft plant and vector mechanistic models developed
- Preliminary Pest and Disease ENM developed

Dairy Research

- Nine moderately resistant clones (105, 112, 16702, 16789, 16805, Kaka 1, Kaka 2, Kaka 3 and 97) out of the original 24 clones identified.
- Mass propagation of Kaka 1, Kaka 2, 112 and 16789 (2000 splits produced)

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs <i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Development Projects

Project 1138 EAAPP

- 6 sites selected & land prepared in Wakiso, Masaka, Mbarara, Rwebitaba, Jinja&Tororo districts
- 900 cuttings of Kaka 1, 112, 16789) distributed to Rwanda Agric. Board (RAB) and ISABU- Burundi
- A ration based on maize stover-Calcium bentonite was developed—milk yield increased by 20%
- Brachiariamulato promoted on 25 farms
- Presented a paper during “NSD project inception meeting” in Rwanda & attended by scientists from Burundi
- Trained a group (45) of UPDF farmers in Kiruhura district
- 2,000 copies of NSD leaflets distributed
- 2,000 copies of a newsletter on research outputs
- One scientific paper for UJAS published
- 100 kg of Chlorisgayana and 20 kg of Clitoriaternatea harvested
- 40 (25 female) farmers trained in Masaka and Wakiso on seed forage production
- A draft of a dairy farmer manual “Feed resource management, cattle breeding and disease management in smallholder systems” produced.
- Analyzed 200 out of 1277 blood samples by PCR, 69 were positive (these are from 8 of the 9 AEZs).
- Several variations identified in the protein sequences of two antigens genes (Tp1 & Tp2) which are target of the cytotoxic T lymphocytes epitopes. Observation: T. parva has two major clusters, which are further divided into several sub-clusters.
- Several variations in the protein sequences of two antigens genes (Tp1 & Tp2) which are target of the cytotoxic T lymphocytes epitopes.
- Observed is that T. parva has two major clusters, which are further divided into several sub-clusters
- 765 sets of milk, blood & milk samples collected from 18 districts for isolation.
- Data have been compiled to establish the 5 factors of E. Coli
- Joint (ECF/MBZs) paper due for publication in UJAS
- 268 superior indigenous cattle for dairy traits in Katakwi from 101 household herds selected for synchronization and A.I. service.

NAGRC&DB

- Launch of AI program took place in Gulu on 13th of February 2013.
- 9 MOUS were signed with the technician and district officials.
- 9 AI technicians provided with certificates, AI equipment and AI inputs. Each technician received 30litre container,10litre container,3 litre field flask, Liquid Nitrogen -43 Litres ; 50 Semen straws: Freisian-20, Gurnsey-10, Ayrshire,10 Jersey-10; Sheath – 50 pieces; Gloves – 100 pieces
- 9 Technicians also provided with herd recording materials – AI service cards, daily milk recording card, Individual Life time cards and Monthly Milk recording books
- 600 doses of semen produced out of 4400 doses targeted
- 3,228 doses out of about 5000 doses targeted delivered 36 AI sub centres
- Utilize the large Ankole and Zebu Cattle population at the NAGRC&DB farms to produce high yielding dairy crosses for small holder and large scale farmers: About 50 Ais carried out
- Developed and shared the sustainability management plan for the breeding stock under EAAPP with WB and DG
- Selected 100 acres where to establish pastures (Maize, elephant grass, bracheria mulato, chloris), at LES and Njeru.
- Carried out soil profiling at Njeru and bush clearing of over 30 acres.
- 6 Jersey heifers confirmed pregnant.
- 5000 doses of non sexed dairy semen delivered

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

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Vote Function: 0151 Agricultural Research

Development Projects

Project 1138 EAAPP

- Repaired one tractor to enable pasture establishment at Njeru and LES
- Recording formats have been given out to a few farmers
- New heard recording software delivered and installed: Interherd
- Milk analyser delivered and installation is yet to be completed
- Value addition
- VAC team currently soliciting views on CVCA draft report in Masindi district
- 9-food formulations for different products developed.
- Cassava starch of high purity and potential for various uses developed (comparable and in some cases better than cereal starch in some attributes).
- Riham & Variety Plus Ltd has evaluated a few protocepts.
- Enzymatic hydrolysis noted very specific requirements for glucose syrup production though it is affected by: high experimental costs & final product requires extensive purification
- Glucose syrup production noted as key in value addition chain of cassava
- Quality /safety status of products (varying contamination with yeast, moulds and E.coli; water activity; MC; sandiness; etc) established
- F/grade chipper & grater procured
- Preliminary data generated on open sun drying efficiency
- 11% MC was maintained & no microbial contaminations detected on products stored in hermetic metal silo
- 15-chain actors involved in cassava cottage businesses mapped in Soroti and Masindi districts
- Assorted lab. Equipment, tools,; chemicals; stationery; others procured at NARL
- Impression drawing; Architectural drawings; Structural strength analysis and BOQ f=done for the planned refurbishment of incubation centres, laboratories and shades at NARL

Rice component

- 30 out of the 30 previously collected rice lines under maintenance were harvested.
- A total of 124 new generations of lines were collected
- 108 from AfricaRice, 12 aromatic lines from IRRI and 4 from EAAPP-Tanzania office
- A total of 80 lines developed for drought tolerance (72 from AfricaRice and 8 from local breeding lines) were planted at NaCRRI.
- A total of 35 lines selected in the previous season were cleaned and ready for planting
- A total of 300 lines were collected and planted for morphological characterization at NaCRRI (MSc Student)
- 12 lines with aroma characteristic were planted planting for initial screening before use by students in breeding
- 4 Rice upland varieties were submitted to Variety Release Committee for uptake pathways.

Wheat component

- Validation of fertilizer application rates continued during the season at 5 sites, 4 levels of N, 3 levels of P using 3 wheat varieties.
- 3 irradiated Pasa lines advanced to Multi-locational trials
- 100 individual plants of M2-2012B selected for ear to row multiplication
- 2 wheat lines at AYT proposed for Multi-locational trials with M5's average yield 2.5t/ha
- 9 lines from introductions selected for AYT
- 14 lines from introductions selected for PYT
- 8 Kenya wheat varieties multiplied at Buginyanya station availed for

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs
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US\$ Thousand

Vote Function: 0151 Agricultural Research

Development Projects

Project 1138 EAAPP

PYT

- Incidences of Russian wheat aphid spotted in Kalengyere trials
- 60% Yellow rust / 30% SR recorded in Kalengyere
- No disease in Buginyanya
- 40% stem rust recorded in Kween-Kere
- 60% stem rust recorded in Bukwo
- 6 FFS identified for scaling up and validation of technologies with KACOFA

Q2

Project Coordination Unit

- Organized 4 Planning meetings for EAAPP Mid-Term Review (MTR) and Regional Wrap-up meetings
 - 5 staff attended regional steering committee meeting in Addis Ababa Ethiopia.
 - 9 staff attended the regional harmonization meeting in Entebbe. 3 policy frameworks on seed, animal feeds and Intellectual Property Rights (IPR) were reviewed.
 - Produced one EAAPP MTR report and submitted to World Bank
 - Undertook a rapid assessment survey of EAAPP PDO indicators
 - Reviewed and re-aligned EAAPP workplan and Budget following the EAAPP MTR
 - Made field visits to 10 EAAPP implementing Agencies for both Pre and post MTR periods. 2 reports were produced.
 - Audit report for EAAPP 2011-12 was generated.
 - Progress of various implementing agencies tracked through M&E. One M&E report for the quarter was produced.
 - Updated the EAAPP Performance Monitoring Plan for the region.
- Cassava Regional Centre of Excellence
Technology Generation

Reasons for Variation in performance

None

Total	306,587
<i>GoU Development</i>	<i>0</i>
<i>External Financing</i>	<i>306,587</i>
<i>NTR</i>	<i>0</i>

Output: 01 5102 Research extension interface promoted and strengthened

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
1. Promising technologies of the four priority enterprises promoted	221001 Advertising and Public Relations	110,838
	221002 Workshops and Seminars	707,570
	221007 Books, Periodicals and Newspapers	11,281
2. Innovation Platforms developed and existing ones strengthened.	221008 Computer Supplies and IT Services	48,120
	221011 Printing, Stationery, Photocopying and Binding	121,062
3. Production and Value Addition Technologies and value added products promoted	224002 General Supply of Goods and Services	1,493,991
4. New learning platforms established and existing ones strengthened		
5. Advisory services/extension strengthened		
6. Capacity built among dairy stakeholders regarding NSD control		

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs <i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Development Projects

Project 1138 EAAPP

7.4. Strategic Public - Private Partnerships and networks for increased market access of cassava, rice, wheat and dairy value added products fostered

Cumulative Outputs Achieved by the end of the Quarter:

Training and technology dissemination

- Training material on CBSD, CMD and whiteflies developed
- 10 maps showing prevalence of CBSD and CMD, generated
- One fact sheet on CBSD spread in Uganda produced and shared with stakeholders nationally and Regionally
- 15-cassava based cottage businesses mapped in Soroti & Masindi districts
- Capacity to promote GMP of over 80 extension staff built
- Capacity of over 65 artisans to comply to good practices to fabricate cassava processing equipment and hermetic metallic silos built
- Promoting improved technologies were promoted Mukono ZARDI delivered 553 Bags for 79 Acres of NASE 14 in 7 districts, Abi Zardi: re-distributed 965 bags of NASE 14 for planting, 600 bags of NASE 14 redistributed in Ngetta zardi; 15 acre multiplication site established in Kidetok Serere District; Ngetta: 3,048 bags (509 acres); Bulindi: 900 bags (150 acres); Mukono: 553 bags (79 acres); Abi ZARDI: 60 bags (15 acres)
- Maintained and supported 2 innovation platforms in Katakwi for poultry, Rice and 1 platform in Soroti (cassava)
- Rwebitaba, 34 participants: 13 F, 21 Male, 22 Cassava farmers, 7 Extension workers. Districts of Kasese, Kabarole, Ntoroko, Bundibugyo, Kyegegwa, Kyenjojo and Kamwenge
- In Buginyanya ZARDI, 2 cross border MSIPS (CASSAVA and Dairy) with 70 Ugandans 35 Kenyan Value chain actors held Busia and Mbale respectively.
- 98 (23F) farmers trained on Cassava agronomy in Nakasongola, 122 rice farmers trained in Kanungu.
- Mukono: 2 cassava graters, 1 press for 1 farmer group, Nabuin: procure 4 processors.
- Nabuin 4 processors for Rice, and cassava procured for Katakwi, Ngora, Kmaido and Bukedea
- Mukono, 45 (40M, 5F) trained on improved pasture, pasture mgmt and dry season feeding
- Nabuin 56 AASPs trained
- Two farmer to farmer retreats held in Rakai and Kiruhura 120 participants attended. Breeding technologies, dry season feeding and disease control were demonstrated.
- 11 AI technicians trained from 11 districts in Eastern Uganda, Butaleja, Budaka, Katakwi, Jinja, Palisa, Mbale, Tororo, Iganga, Busia, Kumi, Kamuli
- 11 candidates selected for subsequent training from Western Uganda
- 24 radio talk shows have so far been held, every Sunday morning on CBS-88.8 sensitizing the masses on Assisted reproductive technologies, different dairy breeds and attributes
- Produced a plan to manage imported stock as well as how to pass on improved genetics to farmers
- One day workshops held in 12 districts in the Central milk shed (Masaka, Kalungu, Lwengo, Rakai, Mukono, Wakiso, Kayunga, Mpigi, Nakasongora, Nakaseke, Luwero, Kiboga)
- 134 heifer delivered in total
- 7,000 doses of sexed semen delivered
- 386 Ankole cattle and crosses were inseminated after synchronization
- 351 heifer calves born on the NAGRC&DB farms
- 80 farmers undertaking recording
- A registry of 1232 farmers compiled
- InterHerd software use started on the NAGRC&DB farms

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs <i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Development Projects

Project 1138 EAAPP

•980 doses of semen produced. 7618 doses delivered to 36 AI subcentres. 7,412 litres of liquid nitrogen delivered

Q3

Cassava RCOE

•Backstopped 2 Multistakeholder meetings for NAADS in Lira & Soroti districts.

NAADS

•Extension/LG systems, Multistakeholder platforms, Demonstrations, District Adaptive Research Teams, Plant Clinics, FFS, Print media and Agricultural shows and exhibitions used as pathways for information delivery among a range of stakeholders.
 •50 acres of foundation cassava planting material maintained by KPE, Mutebiki Kityo farmers and BUCADEF for distribution in the next rains.
 •6428 bags of cassava cuttings equivalent to about 925 acres out of the targeted 1140 acres established among farmers in Ngetta, Abi, Mukono, Nabuin and Bulindi Zones.
 •A rice multiplication plan was developed in which each Zonal institute will access 1 ton of seed for multiplication with farmers/groups
 •6 innovation platforms formed in the 6 zones (2 for Rice and cassava in Ngetta, 1 for dairy in Mbarara, 1 for rice in Bulindi, 1 for cassava in Mukono and one for cassava in Rwebitaba). Task Force/Steering committees formed with clearly defined roles.
 •NAADS trained 112 farmers in processing and value addition in Teso region; districts of Bukedia, Ngora, Serere, Soroti, Kumi, Kaberamaido, Amuria, and Katakwi.

Q2

Cassava Regional Centre of Excellence

- Published 15,000 copies of enhanced information on CMD and CBSD and shared

Value Addition component

- Two staff jointly with NAADS trained 40 equipment fabricators
 NAGRIC component - Improving the availability of dairy germplasm

Subcomponent

- A farmer registry of 1232 farmers was compiled.
 - AI Brochure developed
 - Draft of Regional Embryo Transfer (ET) manual and harmonization of ET protocols developed in conjunction with regional project participants.

- 65 MOU and RELINE farmers undertaking recording

- 40 participants trained in ent

NAADS component Training and Dissemination – (by NAADS)

- NAADS Team conducted a nationwide exercise to identify farmers to participate in the multiplication of new cassava varieties particularly MM96/4271. Data generated on GPS locations of all the sites with improved varieties. -Acreage of each plot with improved varieties established. Disease incidence (ACMD and CBSV) determined on plots. 3 NGOs/Farmer groups were identified to multiply improved cassava varieties 96/4271. The groups signed an MOU with NAADS and district local governments to abide by all the rules of multiplication of certified seed materials. 40 acres of cassava established and maintained.

Reasons for Variation in performance

None

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

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Vote Function: 0151 Agricultural Research		
<i>Development Projects</i>		
Project 1138 EAAPP		
	Total	2,492,861
	<i>GoU Development</i>	<i>0</i>
	<i>External Financing</i>	<i>2,492,861</i>
	<i>NTR</i>	<i>0</i>

Output: 01 5104 Agricultural research capacity strengthened

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
1.Critical mass of well trained staff in various disciplines built.	211103 Allowances	20,010
1.Rice- Formal training for 2 PhD degree commence.	221001 Advertising and Public Relations	22,361
2.Rice- Formal training for 1 MSc degree commence.	221002 Workshops and Seminars	404,472
3.Rice- Short courses	221003 Staff Training	788,825
4.Rice- Vehicle purchased and maintained.	221006 Commissions and Related Charges	70,917
5.Rice- ommunication facilities purchased and used.	221011 Printing, Stationery, Photocopying and Binding	87,184
6.Capacities in wheat research and improvement enhanced.	221012 Small Office Equipment	6,350
1.Institutional research capacity improved in animal nutrition	221014 Bank Charges and other Bank related costs	2,023
2.Institutional research capacity built by training one PhD student	222001 Telecommunications	7,000
3.Institutional research capacity built by training one MSc student	222002 Postage and Courier	856
4.Institutional research capacity improved im molecular pathogen identification and characterization	224002 General Supply of Goods and Services	552,775
5.Institutional research capacity improved in animal breeding	225001 Consultancy Services- Short-term	120,084
6.Annaual Dairy Breeders For a/Platform held	226001 Insurances	93
7.Artificial Insemination techncians trained	227001 Travel Inland	1,550,659
8.Training and backstopping registered breeders undertaken	227002 Travel Abroad	506,452
9.Vist to Dairy RCoE by NAGRC techncal Staff undertaken.	227003 Carriage, Haulage, Freight and Transport Hire	296,338
1.Vist to Dairy RCoE by Dairy breeders undertaken	227004 Fuel, Lubricants and Oils	369,537
2.Short course on Planning and Management of National Breeding Program undertaken	228001 Maintenance - Civil	12,015
3.Short course on advanced technologies on AI & MOET	228002 Maintenance - Vehicles	227,245
4.Short course on Finance Management undertaken	228003 Maintenance Machinery, Equipment and Furniture	6,800
5.Short course on Procurement Management Undertaken	228004 Maintenance Other	4,000
6.International For a on Animal Genetic resources attended		
7.Masters in Livestock Planning and Development and in Agriculture Economics at MU K started		
8.Coordination of EAAPP activities meant for NAGRC&DB undertaken		
9.DAPM activities coordinated		
10.Regional research and training and dissemination activities implemented according to plan		

Vote: 142 National Agricultural Research Organisation

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Vote Function: 0151 Agricultural Research

Development Projects

Project 1138 EAAPP

11. Harmonized M&E system for RCoEs in cooperation with ASARECA developed, adopted and implemented

12. Harmonized M&E system for RCoEs in cooperation with ASARECA developed, adopted and implemented.

1. Improved means of transport to carry out research activities

2. RCoE – Cassava CAPACITY ENHANCED.

Cumulative Outputs Achieved by the end of the Quarter:

- All the 23 consultants recruited, 1 vacant PhD position filled
 - 7 NAGRC & DB participants (2 female and 5 male) attended ALICE conference, 2 (1 female, 1 male) attended EAAPP workshops in Addis Ababa
 - Two staff, (one female one male) attended ESAMI courses in Finance and Audit management
 - Two students enrolled and attending MSc courses at MUK
 - Held 6 planning meetings
 - Held 3 monitoring visits to the Dairy farms. Visited Njeru with PCU, 2 WB visits and two NARO visits at LES
 - Report
 - Assessment in the districts of Southwest Milk shed (Kisoro, Rukungiri, Kabale, Bushenyi, Kiruhura, Lyantonde) and Eastern milk shed (Mbale, Soroti, Kumi)
 - Draft registration protocols
 - 5 staff attended a Policy formulation, analysis and advocacy course
 - 1 Seed Specialist is on board. Seed policy consultant recruited. Recruitment of Food safety consultant completed and 1 food safety 1 draft produced. Prepared a schedule for interaction with Parliament to finalize PVP Bill.
 - Attended project harmonization meeting in Dar es Salaam for Rice RCoE. 9 regional projects finalized.
 - Attended a T&D workshop in Dares Salaam
 - Attended Monitoring and Evaluation workshop in Ethiopia.
 - Attended a regional steering committee meeting in Addis Ababa
 - Effort has been made to ensure full internalization of the EAAPP's Results Framework to effectively track progress at National and regional level.
 - PCU prepared a MTR report. And hosted the regional MTR Wrap up.
 - TOR for scientists, technicians and administrative personnel were enriched.
 - Tuition has been students training under EAAPP.
 - PCU has ensured the procurement plan is regularly updated.
- NAADS team worked on T&D

Q3

- 7 NAGRC & DB participants (2 female and 5 male) attended ALICE conference, 2 (1 female, 1 male) attended EAAPP workshops in Addis Ababa
- Two staff, (one female one male) attended ESAMI courses in Finance and Audit management
- Two students enrolled and attending MSc courses at MUK
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Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

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US\$ Thousand

Vote Function: 0151 Agricultural Research

Development Projects

Project 1138 EAAPP

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- Attended Monitoring and Evaluation workshop in Ethiopia.
- Attended a regional steering committee meeting in Addis Ababa
- Effort has been made to ensure full internalization of the EAAPP's Results Framework to effectively track progress at National and regional level.
- PCU prepared a MTR report. And hosted the regional MTR Wrap up.
- TOR for scientists, technicians and administrative personnel were enriched.
- Tuition has been students training under EAAPP.
- PCU has ensured the procurement plan is regularly updated.
- NAADS team worked on T&D

Reasons for Variation in performance

None

Total	5,055,994
<i>GoU Development</i>	<i>0</i>
<i>External Financing</i>	<i>5,055,994</i>
<i>NTR</i>	<i>0</i>

Output: 01 5105 Generation of technologies for priority commodities

Annual Planned Outputs:

Cassava lines resistant to stress with desirable attributes released, Virus disease maps generated, Early warning systems developed, nutrient-use-efficiencies of elite cassava genotypes determined
Stress tolerant rice varieties released, released rice varieties purified, pests & diseases yield loss determined & performance of new upland and rain fed low land rice lines determined
Tse-tse fly and ticks management options, Forage management, Pest and disease management
New cassava varieties resistant to CMD and CBSV; with other farmer-preferred attributes developed
New rice varieties available to farming communities and Farmers trained on recommended agronomic and post-harvesting techniques of rice
High yielding forage cultivars disseminated, Performance of 5 cross breed calves determined, Concentrates for supp. feeding developed
High quality farmer preferred cassava varieties multiplied for uptake pathways in the mid altitude areas of the SEAEZ and Disease tolerant cassava varieties identified and validated
Promising Integrated weed management options in rice validated with farmer groups
High yielding and high quality rice varieties and lines for small scale farmers are selected, seed systems developed & disseminated
Appropriate method for control of FMD and ECF validated & documented and Extent of feed conservation determined & Methods used to conserve feed identified and evaluated
Highest yielding rice intercropping systems identified and samples analysed MSIP meeting conducted
Livestock management options developed, Technologies for water

<i>Item</i>	<i>Spent</i>
224001 Medical and Agricultural supplies	115,000

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs
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US\$ Thousand

Vote Function: 0151 Agricultural Research

Development Projects

Project 1138 EAAPP

harvesting/harnessing and storage evaluated
Improved/new varieties of rice adapted
Performance of 4 pasture species compared on-station & High yielding grass and legume pasture species adapted.

Cumulative Outputs Achieved by the end of the Quarter:

Cassava RCOE

- F1 botanical seeds have been harvested from the crossing made among the 23 CMD resistant and/or CBSD tolerant lines.
- Harvested the S2 sexual seeds from the crossing block having beta-carotene S1 inbred
- Harvested the F1 botanical seeds from the crossing block having (10 beta carotene and 5 white-fleshed cassava lines).
- 840 isolates collected, DNA /RNA extracted, live cultures maintained for further characterization.
- 10 isolates tested using 6 primer pairs for future sequencing
- DNA extracted from 70 whiteflies and PCR analysis done.
- Live cultures of U/CBSV established in screen house. Transmission studies will be studied for 3 species of white fly.
- Phytoseid for CGM control recovered from 5 out of 9 improved cassava varieties encountered during surveys in 3 agro ecological zones
- Survey on major cassava diseases and pests conducted in 30 out of the 40 districts planned for the 2013a
- Database with Weather & pest and disease designed
- Draft plant and vector mechanistic models developed
- Preliminary Pest and Disease ENM developed

Q2

Cassava Regional Centre of Excellence

Technology Generation

- Maintained 2 acres of 30 parental lines with CMD and CBSD resistance for crossing and 1 acre of 10 beta carotene parental lines with CMD resistance and 5 white-fleshed parental lines established in crossing block. - - Maintained AYT trials of 26 clones established in at four sites: Namulonge, Masaka, Tororo and Kaberamaido
- Maintained 2 acres of candidate varieties (TZ 130) for release.
- Maintained OFTs at 9 sites in Uganda: Arua, Lira, Hoima, Nakasongola, Kayunga, Mukono, Busia, Kamuli, & Kumi.
- Maintained 6 ha of forage seed established at NaLIRRI, NaCCRI and Masaka
- Maintained 6.75 ha of assorted grasses established at NaCRRI.
- Maintained 3 ha of Brachiaria hybrid cv. Mulato established in Wakiso and Masaka

Reasons for Variation in performance

None

Total	115,000
GoU Development	0
External Financing	115,000
NTR	0

Project 1139 ATAAS (Grant) EU, WB and DANIDA Funded

Capital Purchases

Output: 01 5176 Purchase of Office and ICT Equipment, including Software

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs <i>UShs Thousand</i>
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Vote Function: 0151 Agricultural Research

Development Projects

Project 1139 ATAAS (Grant) EU, WB and DANIDA Funded

Annual Planned Outputs:

Power requirements identified

Prerequisite training.

ICTspecialists identified and recruited.

Infrastructure and equipment procured.

Mobile applications , user info needs and Software requirements identified.

- ICT infrastructure and equipment procured;

- MIS applications developed;

- Joint MIS/ME Web portal developed;

Cumulative Outputs Achieved by the end of the Quarter:

None

Reasons for Variation in performance

None

Total	0
<i>GoU Development</i>	<i>0</i>
<i>External Financing</i>	<i>0</i>
<i>NTR</i>	<i>0</i>

Output: 01 5177 Purchase of Specialised Machinery & Equipment

<i>Annual Planned Outputs:</i>	<i>Item</i>	<i>Spent</i>
NAROSEC:	231005 Machinery and Equipment	566,800

PR:

Necessary equipments & tools procured .

NaCRRRI

Laboratory equipment purchased

NaFORRI

Specialized Machinery & Equipment for research activities acquired.

Kachwekano ZARDI

- 1 digital and 1 bench type PH meter procured

- 4 Multi-channel pipettes and 2 Micronic channel pipettes procured

- 1 Micro-organism culture hood procured and installed

- 1 ELISA plate reader procured and installed

- 1 Orbital shaker and 1 Growth Incubator procured

- Procurement of 1 Multi-Lens 1 Microscopes, 1 Digital Colony Counter and 1 Sample storage Freezer conducted.

Kachwekano;

- 1 power generator procured;

- 3 sets of fire safety equipment procured.

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	US\$ Thousand
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Vote Function: 0151 Agricultural Research

Development Projects

Project 1139 ATAAS (Grant) EU, WB and DANIDA Funded

NGETTA ZARDI

- machinery and field equipment for research activities acquired.

BUZARDI:

Laboratory and workshop equipment purchased.

BuZARDI:

2 generators procured

1 tractor procured

Cumulative Outputs Achieved by the end of the Quarter:

Assortment of farm and laboratory equipment

Reasons for Variation in performance

None

Total	566,800
<i>GoU Development</i>	<i>0</i>
<i>External Financing</i>	<i>566,800</i>
<i>NTR</i>	<i>0</i>

Output: 01 51 78 Purchase of Office and Residential Furniture and Fittings

Annual Planned Outputs:

NAROSEC:

PR:

2 glass fitted book selves procured

NaCRRI - Laboratory furniture & fittings purchased.

Kachwekano ZARDI - Conference/dinning room furnished with 8 tables and 50 modern chairs; Resource center furnished with shelves, lockers, reading tables, chairs.

Ngetta ZARDI- Staff welfare improved.

Cumulative Outputs Achieved by the end of the Quarter:

None

Reasons for Variation in performance

None

Total	0
<i>GoU Development</i>	<i>0</i>
<i>External Financing</i>	<i>0</i>
<i>NTR</i>	<i>0</i>

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs and Cumulative Outputs Achieved by End of Quarter (Quantity and Location)	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	
		<i>UShs Thousand</i>
	GRAND TOTAL	44,884,465
	<i>Wage Recurrent</i>	18,031,262
	<i>Non Wage Recurrent</i>	9,470,697
	<i>GoU Development</i>	6,214,528
	<i>External Financing</i>	8,882,242
	<i>NTR</i>	2,285,736

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Outputs and Expenditure in Quarter

Planned and Actual Outputs in Quarter (Quantity and Location)	Expenditures incurred in the Quarter to deliver outputs <i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 01 Headquarters

Outputs Funded

Output: 01 5151 Payments to International Organisations (CGIAR, ASARECA, WARDA)

	<i>Item</i>	<i>Spent</i>
Outputs Planned in Quarter:		
3months	262101 Contributions to International Organisations (Current)	162,500
Subscriptions to international organisations	264101 Contributions to Autonomous Inst.	1,250
Actual Outputs Achieved in Quarter:		
Payment to CGIAR made.		
Reasons for Variation in performance		
NA		
	Total	163,750
	<i>Wage Recurrent</i>	0
	<i>Non Wage Recurrent</i>	163,750
	<i>NTR</i>	0

Outputs Provided

Output: 01 5101 Generation of agricultural technologies

	<i>Item</i>	<i>Spent</i>
Outputs Planned in Quarter:		
1. CGS review held	211103 Allowances	3,376
2. Popularize & supervision of CGS	221011 Printing, Stationery, Photocopying and Binding	9,279
3. 2 Progress reports (GoU & WB).	222001 Telecommunications	0
-Water utility bills paid;	223005 Electricity	2,000
-Electricity utility bills paid;	223006 Water	575
- Telephone bills paid.	224002 General Supply of Goods and Services	102,450
	227004 Fuel, Lubricants and Oils	17,165
QTR 4 planning and Review meeting held`		
Conduct monitoring and evaluation of research.		
ACCOUNTS:		
Payments processed, Financial obligations fulfilled		
Payments processed, Financial obligations fulfilled		
Payments processed, Financial obligations fulfilled		
Actual Outputs Achieved in Quarter:		
Maintained 13 on going CGS projects		
Reasons for Variation in performance		
Insufficient funds		
	Total	134,845
	<i>Wage Recurrent</i>	0
	<i>Non Wage Recurrent</i>	134,845
	<i>NTR</i>	0

Output: 01 5102 Research extension interface promoted and strengthened

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Outputs and Expenditure in Quarter

Planned and Actual Outputs in Quarter (Quantity and Location)	Expenditures incurred in the Quarter to deliver outputs <i>UShs Thousand</i>
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 01 Headquarters

<i>Outputs Planned in Quarter:</i>	<i>Item</i>	<i>Spent</i>
Good governance and corporate social responsibility ensured and promoted.	221002 Workshops and Seminars	7,197
	221008 Computer Supplies and IT Services	1,250
	227001 Travel Inland	29,435

NARO's contribution towards national Agricultural Research .
Networking, Partnership and collaboration stakeholders meetings held;

Stakeholders sensitisation workshops/meetings of conducted;

Quarter 4 outputs as under:

- 1.NARO-NAADS Joint workshops and meetings conducted;
- 2.Stakeholders trained in IAR4D
- 3.Joint stakeholder Planning/Review/Feedback/ workshops and meetings held;
- 4.membership to local Associations made and update
- 5.Networking, Partnership and collaboration stakeholders meetings held;
- 6.stakeholders sensitisation workshops/meetings of conducted;
- 7.Participate in open days/Farmer field schools/exhibitions/trade fairs/Agricultural show/Field days;
- 8.Extension and promotional materials developed and disseminated

Actual Outputs Achieved in Quarter:

Jinja agricultural show and exhibition organised.

Reasons for Variation in performance

Insufficient funds to execute all planned activities

Total	37,882
<i>Wage Recurrent</i>	<i>0</i>
<i>Non Wage Recurrent</i>	<i>37,882</i>
<i>NTR</i>	<i>0</i>

Output: 01 5104 Agricultural research capacity strengthened

<i>Outputs Planned in Quarter:</i>	<i>Item</i>	<i>Spent</i>
Research implementation at institutes guided	211102 Contract Staff Salaries (Incl. Casuals, Temporary)	4,924,090
Well motivated staff retained in the organization	212201 Social Security Contributions	792,474
Improvement in performance management and recruitment skills.	213001 Medical Expenses(To Employees)	25,000
	213002 Incapacity, death benefits and funeral expenses	141,741
Staff positions filled.	213004 Gratuity Payments	603,955
Organizational objectives achieved and individual tasks accomplished.	221003 Staff Training	4,225
Staff motivated	221004 Recruitment Expenses	6,250
A safe environment provided for NARO assets	221005 Hire of Venue (chairs, projector etc)	1,500
Proper procurement documents prepared and efficient supervision of works.	221006 Commissions and Related Charges	16,141
1) Computerised Financial Information, under "Solomon" accounting Package-Micro-soft Dynamics SL	221007 Books, Periodicals and Newspapers	2,000
2) Periodical Financial Budgets	221008 Computer Supplies and IT Services	0
3) NARO- "IFMS"	221009 Welfare and Entertainment	5,000
4) Capacity Development	221012 Small Office Equipment	0
Annual financial audit	221016 IFMS Recurrent Costs	20,075
	222002 Postage and Courier	0
5) Fulfilment of Banking obligations.		

Vote: 142 National Agricultural Research Organisation

QUARTER 4: Outputs and Expenditure in Quarter

Planned and Actual Outputs in Quarter (Quantity and Location)	Expenditures incurred in the Quarter to deliver outputs <i>US\$ Thousand</i>
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Vote Function: 0151 Agricultural Research

Recurrent Programmes

Programme 01 Headquarters

	222003 Information and Communications Technology	0
One component of internal control reviewed.	223004 Guard and Security services	3,815
Adherence to laid down regulations and policies.	224002 General Supply of Goods and Services	1,288
	226001 Insurances	0
Disagreement arising from reports between auditor & management minimised	228002 Maintenance - Vehicles	16,286
NARO staff payroll audited	228004 Maintenance Other	0
Accountability & books of accounts reviewed		
Internal audit work at institutes reviewed.		
Losses/fraud investigated as and when it arose.		
All Assets physically verified and updated Asset register verified		
Internal Auditors capacity improved.		

Actual Outputs Achieved in Quarter:

- Staff salaries paid for the months April-June 2013 paid.
- Utility bills paid
- Assortment of office equipment service and maintained
- An assortment of office stationary and consumable procured

Reasons for Variation in performance

Insufficient funds

Total	6,563,840
<i>Wage Recurrent</i>	<i>4,924,090</i>
<i>Non Wage Recurrent</i>	<i>1,638,462</i>
<i>NTR</i>	<i>1,288</i>

Programme 07 National Crops Research

Outputs Provided

Output: 01 5101 Generation of agricultural technologies

Outputs Planned in Quarter:	Item	Spent
Electricity supplied to all NaCRRI units	211103 Allowances	3,000
Electricity and water system repaired	221002 Workshops and Seminars	3,691
4 Trial sites visited	221011 Printing, Stationery, Photocopying and Binding	11,505
925 litres of fuel purchased	222001 Telecommunications	1,800
7 computers, 1 Gang Mower, 2 Mowers 2 incubators repaired	223005 Electricity	24,750
180 assortment of stationary items purchased	227004 Fuel, Lubricants and Oils	30,406
1 Staff attending Administrative/Management Workshop		
2 Staffs attending Finance and administration seminars		
5 compounds & 5 roads slashed		
8 arrows, 4 bows, and assortment of Torches wistles purchased		
Contracted labour Paid		

Actual Outputs Achieved in Quarter:

Horticulture

- Two pest and disease epidemiology surveys were conducted in 3 more districts (in Rakai, Masaka and Wakiso).
- 3 on-farm trials on disease severities and yield losses established in