

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Highlights of Vote Performance

### V1: Summary of Issues in Budget Execution

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

	Approved Budget	Released by End Q 4	Spent by End Q4	% Budget Released	% Budget Spent	% Releases Spent
Recurrent Wage	33.233	34.233	34.233	103.0%	103.0%	100.0%
Non Wage	25.291	21.742	21.742	86.0%	86.0%	100.0%
Dev't. GoU	51.473	43.806	43.720	85.1%	84.9%	99.8%
Ext. Fin.	0.000	0.000	0.000	0.0%	0.0%	0.0%
<b>GoU Total</b>	<b>109.997</b>	<b>99.781</b>	<b>99.696</b>	<b>90.7%</b>	<b>90.6%</b>	<b>99.9%</b>
<b>Total GoU+Ext Fin (MTEF)</b>	<b>109.997</b>	<b>99.781</b>	<b>99.696</b>	<b>90.7%</b>	<b>90.6%</b>	<b>99.9%</b>
Arrears	0.020	0.034	0.034	166.3%	166.3%	100.0%
<b>Total Budget</b>	<b>110.017</b>	<b>99.815</b>	<b>99.729</b>	<b>90.7%</b>	<b>90.6%</b>	<b>99.9%</b>
<i>A.I.A Total</i>	0.000	0.000	0.000	0.0%	0.0%	0.0%
<b>Grand Total</b>	<b>110.017</b>	<b>99.815</b>	<b>99.729</b>	<b>90.7%</b>	<b>90.6%</b>	<b>99.9%</b>
<b>Total Vote Budget Excluding Arrears</b>	<b>109.997</b>	<b>99.781</b>	<b>99.696</b>	<b>90.7%</b>	<b>90.6%</b>	<b>99.9%</b>

Table V1.2: Releases and Expenditure by Program\*

<i>Billion Uganda Shillings</i>	Approved Budget	Released	Spent	% Budget Released	% Budget Spent	%Releases Spent
Program: 0151 Agricultural Research	110.00	99.78	99.70	90.7%	90.6%	99.9%
<b>Total for Vote</b>	<b>110.00</b>	<b>99.78</b>	<b>99.70</b>	<b>90.7%</b>	<b>90.6%</b>	<b>99.9%</b>

### Matters to note in budget execution

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Highlights of Vote Performance

### a) Matters to note in budget execution

NARO received a supplementary of 1bn on Wage and 13.5mn on arrears leading to budget release and spending of 103.0% and 166.3% on wage and arrears respectively.

### b) Challenges

NARO has been facing the following challenges:

- 1) Lack off an enabling law to unlock the potential benefits of Agricultural biotechnology.
- 2) Inadequate land law which gives ownership of government land to chairman Uganda land commission which makes protection of Agricultural research land difficult and also puts the future of Agriculture research and major Capital investment in jeopardy.
- 3) Inadequate Organizational structure to address emerging demands in Agriculture research. There is increased population, climate variability and increasing administrative districts which exert increased demand for Agriculture research services.
- 4) Lack of funds to operationalize the presidential directive to relocate National Livestock Resources Research Institute from Tororo currently a phosphate deposit to Maruzi in Apac which has hindered appropriate livestock research in the country.
- 5) Streamlining the NAR Act 2005 to address the emerging demands in Agricultural research.
- 6) Lack of sound vehicles to deliver demand driven Agriculture research to spur Agricultural industrialization. The existing fleet is beyond the recommended five years and 250,000 km for boarding off.

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

N/A
<i>(ii) Expenditures in excess of the original approved budget</i>

## V2: Performance Highlights

**Table V2.1: Programme Outcome and Outcome Indicators\***

<b>Programme : 51 Agricultural Research</b>			
<b>Responsible Officer: Director General</b>			
<b>Programme Outcome: Increased production and productivity of priority and strategic commodities</b>			
<b>Sector Outcomes contributed to by the Programme Outcome</b>			
1 .Increased production and productivity of priority and strategic commodities			
<b>Programme Outcome Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2020/21</b>	<b>Actuals By END Q4</b>
Percentage of new varieties promoted and adopted by farmers and other users	Percentage	45%	10%
Number of commercialisable technologies and innovations generated through competitive grant projects	Number	5	3

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Highlights of Vote Performance

Increased production and productivity at some level resulting from utilization of improved technologies	Percentage	2%	6.2%
---	------------	----	------

**Table V2.2: Key Vote Output Indicators\***

<b>Programme : 51 Agricultural Research</b>			
<b>Sub Programme : 01 Headquarters</b>			
<b>KeyOutPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2020/21</b>	<b>Actuals By END Q4</b>
No. of improved productivity technologies generated	Number	107	128
No. of new varieties submitted to Variety Release Committee for release	Number	37	22
No. of research studies under competitive grants scheme	Number	38	40
<b>KeyOutPut : 02 Research extension interface promoted and strengthened</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2020/21</b>	<b>Actuals By END Q4</b>
No. of technological innovation platforms established/supported	Number	68	78
No. of technological innovations delivered to uptake pathways	Number	131	131
<b>Sub Programme : 0382 Support for NARO</b>			
<b>KeyOutPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2020/21</b>	<b>Actuals By END Q4</b>
No. of improved productivity technologies generated	Number	107	131
No. of new varieties submitted to Variety Release Committee for release	Number	37	22
No. of research studies under competitive grants scheme	Number	38	40
<b>KeyOutPut : 02 Research extension interface promoted and strengthened</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2020/21</b>	<b>Actuals By END Q4</b>
No. of technological innovation platforms established/supported	Number	68	78
No. of technological innovations delivered to uptake pathways	Number	131	131
<b>Sub Programme : 07 National Crops Resources Research Institute</b>			
<b>KeyOutPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2020/21</b>	<b>Actuals By END Q4</b>
No. of improved productivity technologies generated	Number	11	11

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Highlights of Vote Performance

No. of new varieties submitted to Variety Release Committee for release	Number	17	12
No. of research studies under competitive grants scheme	Number	2	3
<b>Sub Programme : 08 National Fisheries Resources Research Institute</b>			
<b>KeyOutPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2020/21</b>	<b>Actuals By END Q4</b>
No. of improved productivity technologies generated	Number	12	12
No. of new varieties submitted to Variety Release Committee for release	Number	3	0
No. of research studies under competitive grants scheme	Number	4	4
<b>KeyOutPut : 02 Research extension interface promoted and strengthened</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2020/21</b>	<b>Actuals By END Q4</b>
No. of technological innovation platforms established/supported	Number	6	3
No. of technological innovations delivered to uptake pathways	Number	9	9
<b>Sub Programme : 09 National Forestry Resources Research Institute</b>			
<b>KeyOutPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2020/21</b>	<b>Actuals By END Q4</b>
No. of improved productivity technologies generated	Number	3	3
No. of research studies under competitive grants scheme	Number	3	3
<b>KeyOutPut : 02 Research extension interface promoted and strengthened</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2020/21</b>	<b>Actuals By END Q4</b>
No. of technological innovation platforms established/supported	Number	5	2
No. of technological innovations delivered to uptake pathways	Number	1	1
<b>Sub Programme : 10 National Livestock Resources Research</b>			
<b>KeyOutPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2020/21</b>	<b>Actuals By END Q4</b>
No. of improved productivity technologies generated	Number	18	12
No. of new varieties submitted to Variety Release Committee for release	Number	2	2
No. of research studies under competitive grants scheme	Number	5	5

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Highlights of Vote Performance

<b>Sub Programme : 11 National Semi arid Resources Research</b>			
<b>KeyOutPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2020/21</b>	<b>Actuals By END Q4</b>
No. of improved productivity technologies generated	Number	6	6
No. of new varieties submitted to Variety Release Committee for release	Number	5	7
No. of research studies under competitive grants scheme	Number	2	2
<b>Sub Programme : 12 National Laboratories Research</b>			
<b>KeyOutPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2020/21</b>	<b>Actuals By END Q4</b>
No. of improved productivity technologies generated	Number	1	3
No. of new varieties submitted to Variety Release Committee for release	Number	3	4
No. of research studies under competitive grants scheme	Number	4	2
<b>Sub Programme : 13 Abi ZARDI</b>			
<b>KeyOutPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2020/21</b>	<b>Actuals By END Q4</b>
No. of improved productivity technologies generated	Number	2	2
No. of research studies under competitive grants scheme	Number	2	2
<b>KeyOutPut : 02 Research extension interface promoted and strengthened</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2020/21</b>	<b>Actuals By END Q4</b>
No. of technological innovation platforms established/supported	Number	1	1
No. of technological innovations delivered to uptake pathways	Number	5	5
<b>Sub Programme : 14 Bulindi ZARDI</b>			
<b>KeyOutPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2020/21</b>	<b>Actuals By END Q4</b>
No. of improved productivity technologies generated	Number	8	8
No. of research studies under competitive grants scheme	Number	2	2

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Highlights of Vote Performance

<b>KeyOutPut : 02 Research extension interface promoted and strengthened</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2020/21</b>	<b>Actuals By END Q4</b>
No. of technological innovation platforms established/supported	Number	2	2
No. of technological innovations delivered to uptake pathways	Number	4	4
<b>Sub Programme : 15 Kachwekano ZARDI</b>			
<b>KeyOutPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2020/21</b>	<b>Actuals By END Q4</b>
No. of improved productivity technologies generated	Number	4	4
No. of new varieties submitted to Variety Release Committee for release	Number	2	1
No. of research studies under competitive grants scheme	Number	1	1
<b>KeyOutPut : 02 Research extension interface promoted and strengthened</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2020/21</b>	<b>Actuals By END Q4</b>
No. of technological innovation platforms established/supported	Number	1	1
No. of technological innovations delivered to uptake pathways	Number	3	3
<b>Sub Programme : 1560 Relocation and Operationalisation of the National Livestock Resources Research Institute (NALIRRI)</b>			
<b>KeyOutPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2020/21</b>	<b>Actuals By END Q4</b>
No. of improved productivity technologies generated	Number	1	1
<b>Sub Programme : 16 Mukono ZARDI</b>			
<b>KeyOutPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2020/21</b>	<b>Actuals By END Q4</b>
No. of improved productivity technologies generated	Number	3	3
No. of research studies under competitive grants scheme	Number	2	1
<b>Sub Programme : 17 Ngetta ZARDI</b>			
<b>KeyOutPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2020/21</b>	<b>Actuals By END Q4</b>
No. of improved productivity technologies generated	Number	1	8

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Highlights of Vote Performance

No. of research studies under competitive grants scheme	Number	1	1
<b>KeyOutPut : 02 Research extension interface promoted and strengthened</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2020/21</b>	<b>Actuals By END Q4</b>
No. of technological innovation platforms established/supported	Number	3	0
No. of technological innovations delivered to uptake pathways	Number	6	6
<b>Sub Programme : 18 Nabium ZARDI</b>			
<b>KeyOutPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2020/21</b>	<b>Actuals By END Q4</b>
No. of improved productivity technologies generated	Number	7	4
No. of research studies under competitive grants scheme	Number	2	2
<b>Sub Programme : 19 Mbarara ZARDI</b>			
<b>KeyOutPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2020/21</b>	<b>Actuals By END Q4</b>
No. of improved productivity technologies generated	Number	7	7
<b>Sub Programme : 20 Buginyaya ZARDI</b>			
<b>KeyOutPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2020/21</b>	<b>Actuals By END Q4</b>
No. of improved productivity technologies generated	Number	6	5
No. of new varieties submitted to Variety Release Committee for release	Number	2	4
No. of research studies under competitive grants scheme	Number	2	2
<b>Sub Programme : 21 Rwebitaba ZARDI</b>			
<b>KeyOutPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2020/21</b>	<b>Actuals By END Q4</b>
No. of improved productivity technologies generated	Number	6	6
No. of research studies under competitive grants scheme	Number	1	2
<b>Sub Programme : 27 National Coffee Research Institute</b>			
<b>KeyOutPut : 01 Generation of agricultural technologies</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2020/21</b>	<b>Actuals By END Q4</b>
No. of improved productivity technologies generated	Number	3	3

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Highlights of Vote Performance

No. of new varieties submitted to Variety Release Committee for release	Number	3	0
No. of research studies under competitive grants scheme	Number	3	3
<b>KeyOutPut : 02 Research extension interface promoted and strengthened</b>			
<b>Key Output Indicators</b>	<b>Indicator Measure</b>	<b>Planned 2020/21</b>	<b>Actuals By END Q4</b>
No. of technological innovation platforms established/supported	Number	3	7
No. of technological innovations delivered to uptake pathways	Number	5	2

### Performance highlights for the Quarter

NARO undertakes and promotes research in crops, forestry, livestock and fisheries. The following were achieved during the reporting period:

#### A. Varieties submitted for Release

- 2 maize varieties were developed. NARO-maize-63-VitA and NARO-maize-64-VitA (Orange)
- Four rice varieties were developed. AGRA-55, PR107, ARU1189, MET12
- 3 Sweet potato clones were developed NKB17, NKB135, and NKB216
- 3 Cassava varieties were developed - UG120156, UG120193 and Mkumba
- 4 Sorghum were developed. (TEMANI16H, TITAN, TEMANI 20, BRAHN)
- 3 Groundnuts, 2 lablab variety, 1 Potato variety (Oliver F1 potato hybrid)

#### B. Varieties under further evaluation

- 2 Candidate coffee varieties trial show that:KP423 (226 cm) and KAWACOM (218 cm) are significantly promising
- 5 promising bean lines still under second NPT testing
- 5 NARITA banana hybrids for on-farm and DUS.

#### C. Prototypes developed

- First version of a post-harvest mobile phone application to enhance dissemination of information and technologies developed.
- ICT based monitoring tool developed and tested for monitoring impact of banana technologies on-farm;

#### D. Prototypes under development

NARO has other prototypes under development:

- 1st prototype of improved animal drawn weeder
- 1st prototype of power tiller weeder
- 1st prototype of motorized coffee pulper
- 1st prototype of briquette carbonizer
- 1st prototype of hybrid solar dryer
- 3rd prototype of liquid smoke distiller
- 1st prototype blend of high energy content briquette

#### E. Other crop technologies generated

- 5 preliminary cocoa prototype samples developed. They include Chocolate, cocoa powder, cocoa butter, cocoa wine, and pasteurized cocoa juice. Prototypes under further refinement.
- Cocoa wine products developed from cocoa pulp juice packaged and commercialized.
- 3 digital products developed. (i) Digital estimation of CBSD necrosis severity; (2) Digital estimation of sweetpotato weevil damage on tubers. And electronic whitefly nymph phenotyping.
- Tuta absoluta distribution and damage level ascertained in Masaka, Mbale and Kapchorwa. Highest damage (4-5) was observed in Bukooto East, Buwanga - Kiganagazi and Ggulama village.
- Fusarium wilt disease map developed for Kalangala to guide disease management on oil palm
- 1 cover crop in oil palm production system identified and being validated.
- 1 modified bean planter



# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Highlights of Vote Performance

8. 1 SLM tech developed (water and fertilizer-use efficiency in tomato)
9. 1 cost effective application of systemic insecticide for whitefly control in cassava.
10. 1 protocol for establishment of community seed banks developed.
11. Musabase is a database for digitalized banana data collection has been implemented at NBRP.
12. Effectiveness of foliar fertilizers on cotton was determined and demonstrated in multi-locations.
13. A catalogue of farmer preferences for rhizobia has been developed
14. Recipes and protocols for extruded bagia and puffed snacks tested
15. Market preference of bagia and puffed snacks assessed for appearance, colour, hardness and crunchiness two samples (extruded bagia and puffed pigeon pea snack) were developed for acceptability testing
16. Draft of Protocol and formulations for production of bio-fertilizer developed.
17. Developed a soil management strategy for a 20% citrus productivity increment
18. Developed Optimal plant density for 50% banana productivity for the LAC
19. One pigeon pea variety identified for the LAC zone
20. Established vegetables suitable for the karamoja dry lands. 2 tomato varieties rio grande and Nuru F1 hybrid to drought tolerant and high yielding (5MT/Ha). Pepper varieties california wonder and Cayenne long slim were drought tolerant (survived 30°C). Cabbage variety copenhagen and baraka F1 and spinach were drought tolerant with high leafy biomass, Onion variety red creole (15 Mt/Ha) exhibited tolerance to drought. Tomatoes varieties were susceptible to early blight
21. 3 maps on incidence and severity of Alternaria brown spot disease, Pseudoecrosora leaf and fruit spot and Anthracnose in northern Uganda updated
22. The green house germination technique is promising as most effective to estimate soil seed bank, followed by cloth bag method. Flootation method is not suitable
23. Established that mulching suppresses weeds the most, followed by intercropping pattern of 2 lines of soybean in between one line of maize based on preliminary findings. Sole cropping maize was the most vulnerable to weeds
24. Three maps on incidence and severity of Alternaria brown spot disease, Pseudoecrosora leaf and fruit spot and Anthracnose in northern Uganda updated

### F. Livestock technologies generated

25. Manufacture of the Anti-tick vaccine trial batch progressed to vaccine formulation
26. Appropriate feed formula for swine weaners using local ingredients
27. Appropriate feed formula for fattening beef cattle using local ingredients
28. Health management practices cattle, pigs, goats and poultry
29. Feed formula for swine weaners
30. Feed formula fattening beef cattle
31. Formalin test kit prototype developed
32. Efficacy trials for desert locust control using fungal strains and Low cost chemical combinations progressed to the second phase.
33. Established that the consumption of raw milk, helping animals during delivery exposes humans to fetal fluids, and the handling & consumption of abortus are the key risk factors for Brucellosis transmission in the karamoja study area.
34. A profile of efficient and cost effective parasite and disease management approaches in poultry generated.
35. 123 Number of oocytes harvested for Jersey embryos development
  - 2) 38 elite calves produce of which 34 were pure Jersey, 3 were from a cross between Friesiana d Jersey and 1 calf was from a cross between Ashire and Jersey
36. 02 stingless bee hive prototypes (NAROSB5 & NAROSB6) tested for suitability.

### G. Value addition technologies generated

Commercial value added products developed and ready promotion and up-scaling.

37. Market-smart AroNutro powder.
38. Instant Maize Snacks
39. 1 protocept of precooked puffed bean product;
40. 1 study (Out-scaling NARO Polycyclic Aromatic Hydrocarbon Safe Smoking Technologies for increased market competitiveness of Fish value chain actors).
41. One biodegradable nano-surface package for increased trade of fresh foods..
42. 760 liters of Nile perch oil produced by the unit. (i) 750 (100mL) and 500 (60 ml) branded bottles of Nile perch oil produced; (ii) Five hundred liters (500l) of fortified Nile perch oil produced.
43. Market survey for products preference of fish oil production in Uganda conducted.
44. Sugar-rich Sorghum syrup developed for use as a sweetener in foods, beverages and pharmaceutical products. .
45. One anti-cancer milk-based pharmaceutical.
46. One anti-diabetic milk-based pharmaceutical.
47. One protocol for massive production of appropriate algal species developed.
48. One hive prototype for domestication of stingless bees developed.

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Highlights of Vote Performance

49. Information pack for ensiling properties of lablab developed.  
 50. Protocol for massive production and processing of insect meal.  
 51. One protocol for harveting honey form stingless bees.  
 52. Recipes and protocols for extruded bagia and puffed snacks tested  
 53. Assessed market preference of bagia and puffed snacks  
 54. Established that high Quality Cassava Flour (HQCF) from four cassava varieties (Narocas1, Nase19, Nase14 and Nase3) can variably substitute wheat flour upto 30% in leavened bread without compromising sensory attributes and significantly increase mineral content  
 55. One cassava-based formula for growing chicken.  
 56. Instant ready to drink specialty tea prototype developed

### H. Forestry technologies generated

57. Model process for sustainable pulp & paper production developed.  
 58. 5 high value species with high medicinal value (*Zanthoxylum*, *Prunus africana*, *Kigelia africana*, *Olea*, spp and *Carisa edulis*) conserved in an arboretum at Kifu station  
 59. Established jackfruit's nutritional advantage over other fruits with respect to these macronutrients. 5 acres of land prepared and planted with 5 jackfruit varieties for production of quality germplasm  
 60. 3.5 acres of Calliandra seed stand silviculturally maintained for seed production. 10kg of Calliandra seeds expected by end of growing season  
 61. 1 design of value added woodwaste product (resin-treated table) developed. 2 epoxy-treated tables from wood waste (tree stump offcuts) developed. 3 sets of resin-treated tables developed from wood waste. 10 laboratory stools produced from wood.  
 62. 1,130 and 400 *E. camaldulensis* cumulatively raised and maintained respectively. 12,000 Bronze bug and 13,750 Red gum lerp psyllid were reared on *E. camaldulensis* host seedlings. 12,500 *C. noackae* and 16,500 *P. bliteus* parasitoids were reared for release against bronze bug and Red gum Lerp psyllid respectively. Parasitism levels of *P. bliteus* and *C. noackae* were established at 95% and 20% compared to 90% and 15% respectively in quarter 3, 78% and 10% respectively in quarter 2 and 76% and 8% in quarter one. This was extremely beyond the estimated parasitism levels of 32 – 51 % for *P. bliteus* in the first year of this project (2018/19).  
 63. 98 chemical compounds were isolated from 12 samples of selected antidiabetic woody species using Gas chromatography-Mass spectrometry. Compounds in selected plant extracts were further fractionated using column chromatography and thin-layer chromatography.  
 64. 50 energy saving cook stoves of small, medium and large sizes produced for sale.  
 65. One acre of Shea tree germplasm established and maintained for conservation of the endangered tree.

### I. Fisheries technologies generated

66. Baseline report on status of small fishes in lakes Victoria, Nabugabo, Kyoga, and Albert .  
 67. Electronic platform (eCAS) for digital collection of fishery dependent data developed.

## V3: Details of Releases and Expenditure

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

<i>Billion Uganda Shillings</i>	Approved Budget	Released	Spent	% GoU Budget Released	% GoU Budget Spent	%GoU Releases Spent
<b>Program 0151 Agricultural Research</b>	<b>110.02</b>	<b>99.81</b>	<b>99.73</b>	<b>90.7%</b>	<b>90.6%</b>	<b>99.9%</b>
<b>Class: Outputs Provided</b>	<b>80.59</b>	<b>71.88</b>	<b>71.88</b>	<b>89.2%</b>	<b>89.2%</b>	<b>100.0%</b>
015101 Generation of agricultural technologies	15.73	12.52	12.52	79.6%	79.6%	100.0%
015102 Research extension interface promoted and strengthened	7.03	4.74	4.74	67.4%	67.4%	100.0%
015103 Internal Audit	0.18	0.11	0.11	58.7%	58.7%	100.0%
015104 Agricultural research capacity strengthened	57.65	54.52	54.52	94.6%	94.6%	100.0%
<b>Class: Outputs Funded</b>	<b>1.84</b>	<b>1.20</b>	<b>1.20</b>	<b>64.9%</b>	<b>64.9%</b>	<b>100.0%</b>
015151 Payments to International Organisations (CGIAR, ASARECA, WARDA)	1.84	1.20	1.20	64.9%	64.9%	100.0%

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Highlights of Vote Performance

<i>Billion Uganda Shillings</i>	Approved Budget	Released	Spent	% GoU Budget Released	% GoU Budget Spent	%GoU Releases Spent
<b>Class: Capital Purchases</b>	<b>27.56</b>	<b>26.70</b>	<b>26.62</b>	<b>96.9%</b>	<b>96.6%</b>	<b>99.7%</b>
015172 Government Buildings and Administrative Infrastructure	20.11	19.33	19.33	96.1%	96.1%	100.0%
015176 Purchase of Office and ICT Equipment, including Software	0.45	0.45	0.45	100.0%	100.0%	100.0%
015177 Purchase of Specialised Machinery & Equipment	6.91	6.91	6.82	100.0%	98.8%	98.8%
015178 Purchase of Office and Residential Furniture and Fittings	0.09	0.02	0.02	20.0%	20.0%	100.0%
<b>Class: Arrears</b>	<b>0.02</b>	<b>0.03</b>	<b>0.03</b>	<b>166.3%</b>	<b>166.3%</b>	<b>100.0%</b>
015199 Arrears	0.02	0.03	0.03	166.3%	166.3%	100.0%
<b>Total for Vote</b>	<b>110.02</b>	<b>99.81</b>	<b>99.73</b>	<b>90.7%</b>	<b>90.6%</b>	<b>99.9%</b>

**Table V3.2: 2020/21 GoU Expenditure by Item**

<i>Billion Uganda Shillings</i>	Approved Budget	Released	Spent	% GoU Budget Released	% GoU Budget Spent	%GoU Releases Spent
<b>Class: Outputs Provided</b>	<b>80.59</b>	<b>71.88</b>	<b>71.88</b>	89.2%	89.2%	100.0%
211102 Contract Staff Salaries	33.23	34.23	34.23	103.0%	103.0%	100.0%
211103 Allowances (Inc. Casuals, Temporary)	4.44	3.10	3.10	69.8%	69.8%	100.0%
212101 Social Security Contributions	3.32	3.32	3.32	100.0%	100.0%	100.0%
213001 Medical expenses (To employees)	0.30	0.30	0.30	100.0%	100.0%	100.0%
213002 Incapacity, death benefits and funeral expenses	0.23	0.23	0.23	100.0%	100.0%	100.0%
213004 Gratuity Expenses	4.54	4.54	4.54	100.0%	100.0%	100.0%
221001 Advertising and Public Relations	1.13	0.66	0.66	58.6%	58.6%	100.0%
221002 Workshops and Seminars	5.32	2.58	2.58	48.5%	48.5%	100.0%
221003 Staff Training	0.87	0.87	0.87	99.9%	99.9%	100.0%
221004 Recruitment Expenses	0.11	0.06	0.06	50.0%	50.0%	100.0%
221006 Commissions and related charges	0.05	0.05	0.05	98.5%	98.5%	100.0%
221007 Books, Periodicals & Newspapers	0.09	0.01	0.01	12.0%	12.0%	100.0%
221008 Computer supplies and Information Technology (IT)	0.36	0.35	0.35	99.0%	99.0%	100.0%
221009 Welfare and Entertainment	0.55	0.27	0.27	48.8%	48.8%	100.0%
221011 Printing, Stationery, Photocopying and Binding	0.67	0.35	0.35	52.1%	52.1%	100.0%
221012 Small Office Equipment	0.10	0.02	0.02	21.6%	21.6%	100.0%
221016 IFMS Recurrent costs	0.23	0.23	0.23	99.7%	99.7%	100.0%
221017 Subscriptions	0.08	0.08	0.08	98.5%	98.2%	99.7%
222001 Telecommunications	0.17	0.17	0.17	98.9%	98.9%	100.0%
222002 Postage and Courier	0.01	0.01	0.01	53.8%	53.8%	100.0%
222003 Information and communications technology (ICT)	0.62	0.62	0.62	99.8%	99.8%	100.0%
223002 Rates	0.23	0.23	0.23	100.0%	100.0%	100.0%
223004 Guard and Security services	0.44	0.43	0.43	98.3%	98.3%	100.0%

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Highlights of Vote Performance

223005 Electricity	1.11	1.10	1.10	98.8%	98.8%	100.0%
223006 Water	0.10	0.09	0.09	98.7%	98.7%	100.0%
224001 Medical Supplies	2.35	2.35	2.35	100.0%	100.0%	100.0%
224004 Cleaning and Sanitation	0.40	0.39	0.39	98.0%	98.0%	100.0%
224005 Uniforms, Beddings and Protective Gear	0.17	0.17	0.17	97.7%	97.7%	100.0%
224006 Agricultural Supplies	6.02	6.59	6.59	109.5%	109.5%	100.0%
225001 Consultancy Services- Short term	1.96	0.45	0.45	23.0%	23.0%	100.0%
226001 Insurances	0.12	0.12	0.12	99.6%	99.6%	100.0%
226002 Licenses	0.27	0.27	0.27	100.0%	100.0%	100.0%
227001 Travel inland	4.92	2.79	2.79	56.7%	56.7%	100.0%
227002 Travel abroad	0.25	0.00	0.00	0.0%	0.0%	0.0%
227004 Fuel, Lubricants and Oils	1.78	0.88	0.88	49.7%	49.7%	100.0%
228001 Maintenance - Civil	1.96	1.96	1.96	99.9%	99.9%	100.0%
228002 Maintenance - Vehicles	1.09	1.07	1.07	98.8%	98.8%	100.0%
228003 Maintenance – Machinery, Equipment & Furniture	0.82	0.81	0.81	99.0%	99.0%	100.0%
228004 Maintenance – Other	0.14	0.07	0.07	49.8%	49.8%	100.0%
273102 Incapacity,death benefits and funeral expenses	0.05	0.05	0.05	98.6%	98.6%	100.0%
<b>Class: Outputs Funded</b>	<b>1.84</b>	<b>1.20</b>	<b>1.20</b>	64.9%	64.9%	100.0%
262201 Contributions to International Organisations (Capital)	1.80	1.19	1.19	66.3%	66.3%	100.0%
264101 Contributions to Autonomous Institutions	0.04	0.01	0.01	11.4%	11.4%	100.0%
<b>Class: Capital Purchases</b>	<b>27.56</b>	<b>26.70</b>	<b>26.62</b>	96.9%	96.6%	99.7%
281501 Environment Impact Assessment for Capital Works	0.31	0.02	0.02	4.8%	4.8%	100.0%
281502 Feasibility Studies for Capital Works	0.31	0.02	0.02	4.8%	4.8%	100.0%
281503 Engineering and Design Studies & Plans for capital works	0.43	0.24	0.24	56.0%	56.0%	100.0%
281504 Monitoring, Supervision & Appraisal of Capital work	0.61	0.61	0.61	100.0%	100.0%	100.0%
312101 Non-Residential Buildings	14.05	14.05	14.05	100.0%	100.0%	100.0%
312102 Residential Buildings	0.43	0.43	0.43	100.0%	100.0%	100.0%
312104 Other Structures	3.96	3.96	3.96	100.0%	100.0%	100.0%
312202 Machinery and Equipment	1.88	1.88	1.86	100.0%	98.9%	98.9%
312203 Furniture & Fixtures	0.09	0.02	0.02	20.0%	20.0%	100.0%
312213 ICT Equipment	0.45	0.45	0.45	100.0%	100.0%	100.0%
312214 Laboratory Equipments	5.03	5.03	4.97	100.0%	98.7%	98.7%
<b>Class: Arrears</b>	<b>0.02</b>	<b>0.03</b>	<b>0.03</b>	166.3%	166.3%	100.0%
321605 Domestic arrears (Budgeting)	0.00	0.00	0.00	116.9%	116.9%	100.0%
321607 Utility arrears (Budgeting)	0.02	0.02	0.02	100.0%	100.0%	100.0%
321613 Telephone arrears (Budgeting)	0.00	0.01	0.01	1.3%	1.3%	100.0%
<b>Total for Vote</b>	<b>110.02</b>	<b>99.81</b>	<b>99.73</b>	90.7%	90.6%	99.9%

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

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Highlights of Vote Performance

<i>Billion Uganda Shillings</i>	Approved Budget	Released	Spent	% GoU Budget Released	% GoU Budget Spent	%GoU Releases Spent
<b>Program 0151 Agricultural Research</b>	<b>110.02</b>	<b>99.81</b>	<b>99.73</b>	<b>90.7%</b>	<b>90.6%</b>	<b>99.9%</b>
<i>Recurrent SubProgrammes</i>						
01 Headquarters	48.55	48.11	<b>48.11</b>	99.1%	99.1%	100.0%
07 National Crops Resources Research Institute	0.24	0.19	<b>0.19</b>	78.7%	78.7%	100.0%
08 National Fisheries Resources Research Institute	0.33	0.25	<b>0.25</b>	76.5%	76.5%	100.0%
09 National Forestry Resources Research Institute	0.23	0.18	<b>0.18</b>	77.8%	77.8%	100.0%
10 National Livestock Resources Research	5.24	4.27	<b>4.27</b>	81.6%	81.6%	100.0%
11 National Semi arid Resources Research	0.24	0.17	<b>0.17</b>	70.2%	70.2%	100.0%
12 National Laboratories Research	1.33	1.03	<b>1.03</b>	77.9%	77.9%	100.0%
13 Abi ZARDI	0.18	0.14	<b>0.14</b>	75.1%	75.1%	100.0%
14 Bulindi ZARDI	0.19	0.15	<b>0.15</b>	81.6%	81.6%	100.0%
15 Kachwekano ZARDI	0.18	0.13	<b>0.13</b>	73.0%	73.0%	100.0%
16 Mukono ZARDI	0.35	0.28	<b>0.28</b>	79.7%	79.7%	100.0%
17 Ngetta ZARDI	0.18	0.13	<b>0.13</b>	73.5%	73.5%	100.0%
18 Nabium ZARDI	0.18	0.13	<b>0.13</b>	73.3%	73.3%	100.0%
19 Mbarara ZARDI	0.18	0.15	<b>0.15</b>	81.4%	81.4%	100.0%
20 Buginyaya ZARDI	0.34	0.27	<b>0.27</b>	79.6%	79.6%	100.0%
21 Rwebitaba ZARDI	0.18	0.15	<b>0.15</b>	79.6%	79.6%	100.0%
26 NARO Internal Audit	0.18	0.11	<b>0.11</b>	58.7%	58.7%	100.0%
27 National Coffee Research Institute	0.25	0.16	<b>0.16</b>	65.6%	65.6%	100.0%
<i>Development Projects</i>						
0382 Support for NARO	50.17	42.62	<b>42.53</b>	84.9%	84.8%	99.8%
1560 Relocation and Operationalisation of the National Livestock Resources Research Institute (NALIRRI)	1.30	1.19	<b>1.19</b>	91.5%	91.5%	100.0%
<b>Total for Vote</b>	<b>110.02</b>	<b>99.81</b>	<b>99.73</b>	<b>90.7%</b>	<b>90.6%</b>	<b>99.9%</b>

**Table V3.4: External Financing Releases and Expenditure by Sub Programme**

<i>Billion Uganda Shillings</i>	Approved Budget	Released	Spent	% Budget Released	% Budget Spent	%Releases Spent
---------------------------------	-----------------	----------	-------	-------------------	----------------	-----------------

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	US\$ Thousand
<b>Program: 51 Agricultural Research</b>			
<i>Recurrent Programmes</i>			
<b>Subprogram: 01 Headquarters</b>			
<i>Outputs Provided</i>			
<b>Output: 01 Generation of agricultural technologies</b>			
1 work plan and budget 2021/22 appropriated	(1) NARO Annual work plan and budget 2021/22 finalized. 2) NARO Semi-annual status report on Agricultural research in Uganda developed.	<b>Item</b>	<b>Spent</b>
3 resource mobilization platforms developed		221002 Workshops and Seminars	50,582
16 PARIs plans & target FY2021-22 set		227001 Travel inland	18,549
1 NARO Mid-term Performance report developed			
2 records management policy instruments developed			
16 technologies with IP potential			
<i>Reasons for Variation in performance</i>			
		<b>Total</b>	<b>69,131</b>
		Wage Recurrent	0
		Non Wage Recurrent	69,131
		<i>AIA</i>	0

### Output: 02 Research extension interface promoted and strengthened

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

		<b>Item</b>	<b>Spent</b>
6 online platforms to support research& development in place	1. Presented for approval the partnership policy and DIRCKM policy framework to management and NARO governing council.	221001 Advertising and Public Relations	80,442
10 technologies with commercial potential identified		221002 Workshops and Seminars	8,108
2 Policy framework documents validated	2. Developed the following: draft partnership policy guidelines; a tool and generated draft information on technologies taken to different uptake pathways.	221008 Computer supplies and Information Technology (IT)	3,968
4 existing platform maintained	4. Finalized report on MSIPs supported by NARO.	227001 Travel inland	6,521
1 Mobile App development initiated	5. Printed the following: 1000 copies of the commercialization policy. 1000 copies of commercialization guidelines.		
1 digital library platform developed	6. Conducted industrial engagements with Uganda Breeders Association, Uganda Breweries Limited, Nile Breweries Limited, Seed companies for licensing; (Knowledge City)		
	7. Up-dating the NARO active variety list for commercialization		
	8. A web-based Records Management system being developed.		
	9. One Patent application (use of subolesin for tick control) revised following examiners' comments, One patent application filed ( Use of LFA in detection and sdiagnosis of ASF) and one utility model (Process of milk culturing) application drfated and ready for filing		
	10. IPMC members and selected staff trained on licece negotaition and Intellectual Property valuation.		
	11. Application for International Standard Book Numbers (ISBN) for available knowledge products submitted to National Book Library. 19. Thirty scientific publications uploaded on the information hub		
	12. NARO Annual Report edition is ready for print .		
	13. NARO wide Newsletter Developed. Draft is ready and awaiting approval		
	14. Distributed and popularized the NARO file plan to selected institutes including BugiZARDI, NaSARRI, Ngetta ZARDI and BuZARDI		
	15. designed and developed a records digitization system pending testing		
	16. 121 publications digitized (65 reports, 21 brochures, 35 manuals and leaflets)		
	17. 86 publications allocated class numbers and catalog entries		
	18. 200 journal articles uploaded onto the e-repository at NARO Information Hub		

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
------------------------	---	--	------------------

*Reasons for Variation in performance*

<b>Total</b>	<b>99,038</b>
Wage Recurrent	0
Non Wage Recurrent	99,038
<i>AIA</i>	0

**Output: 04 Agricultural research capacity strengthened**



# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	US\$ Thousand
2877.7 hectares of land surveyed for titling at serere,lugala,Nabuin and Ssendusu Well implemented research agenda in 16 PARIs NARO wide Performance Mid-term report 100 NARO staff & associates trained in IP NARO Council oversight role strengthened	1) Kumi, boundaries were opened and the titling process is underway; The title is expected anytime. 2) Land in Aduku cleared for proper identification and labour paid. 3) 526 ha of land at Nabuin ZARDI surveyed and boundaries verified by district land committees to secure title and minimize encroachment. 4) Support provided in attending 1 court case to defend RwebiZARDI land 5) Un surveyed land surveyed and consultancy survey report produced. 6) Visits to Ministerial Zonal Offices (Jinja, Soroti, Lira, Gulu, and Mbarara) undertaken to followup NARO land titling progress.	<b>Item</b>	<b>Spent</b>
		211102 Contract Staff Salaries	34,233,229
		211103 Allowances (Inc. Casuals, Temporary)	1,004,268
		212101 Social Security Contributions	3,323,323
		213001 Medical expenses (To employees)	300,000
		213002 Incapacity, death benefits and funeral expenses	225,000
		213004 Gratuity Expenses	4,541,900
		221001 Advertising and Public Relations	26,710
		221002 Workshops and Seminars	96,763
		221003 Staff Training	27,748
		221008 Computer supplies and Information Technology (IT)	41,955
		221009 Welfare and Entertainment	171,949
		221011 Printing, Stationery, Photocopying and Binding	72,110
		221012 Small Office Equipment	3,000
		221016 IFMS Recurrent costs	94,238
		222001 Telecommunications	108,206
		222002 Postage and Courier	5,140
		222003 Information and communications technology (ICT)	52,613
		223004 Guard and Security services	137,451
		223005 Electricity	506,517
		223006 Water	24,314
		224001 Medical Supplies	92,957
		224004 Cleaning and Sanitation	141,150
		224005 Uniforms, Beddings and Protective Gear	62,500
		224006 Agricultural Supplies	747,034
		225001 Consultancy Services- Short term	15,059
		226001 Insurances	100,303
227001 Travel inland	208,947		
227004 Fuel, Lubricants and Oils	227,893		
228001 Maintenance - Civil	813,848		
228002 Maintenance - Vehicles	341,040		
228003 Maintenance – Machinery, Equipment & Furniture	132,484		
228004 Maintenance – Other	38,726		
273102 Incapacity,death benefits and funeral expenses	25,000		

### Reasons for Variation in performance

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
Ivukula survey activity were disrupted due hostile environment.			
		<b>Total</b>	<b>47,943,374</b>
		Wage Recurrent	34,233,229
		Non Wage Recurrent	13,710,145
		AIA	0
		<b>Total For SubProgramme</b>	<b>48,111,544</b>
		Wage Recurrent	34,233,229
		Non Wage Recurrent	13,878,315
		AIA	0

### Recurrent Programmes

#### Subprogram: 07 National Crops Resources Research Institute

##### Outputs Provided

#### Output: 01 Generation of agricultural technologies

Produce breeder and early generation seed for all parental materials and commercial varieties 1,000kgs of maize, 500kgs of Beans, 500bags of Cassava and 2,000 assorted horticultural seedlings for all farmers in uganda	Item	Spent
1) 25 acres of cassava (NAROCASS 1) and 10 acres of sweetpotato multiplied in Kiggumba	211103 Allowances (Inc. Casuals, Temporary)	24,388
2) 2.7 MT of breeder seed were produced under (9 acres) in two locations (Rwebitaba and NaCRRI).		
3) 0.96MT of breeder seed for NAROBEAN 6 and NAROBEAN 7 produced.		
4). 300kgs of foundation seed of beans produced (NAROBEAN 6&7)		
5). 11 tons of rice foundation seed produced and processed		
6) 1 ton of rice breeder seed produced for 4 rice varieties		
7). 1 ton of Quality rice breeder seed produced		
8) 2.97 tons of breeder seed for High Iron Bean		
9). Maize – 2 tons, - Land prepared for next planting.		
10 8 acres established for production of breeder seed for NAROBEAN 6 and 7		
(11) 2.97 MT of breeder seed for High Iron beans		

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
------------------------	---	--	---------------

### Reasons for Variation in performance

<b>Total</b>	<b>24,388</b>
Wage Recurrent	0
Non Wage Recurrent	24,388
<i>AIA</i>	0

### Output: 04 Agricultural research capacity strengthened

Maintenance of three Bio-sciences laboratories equipment and vehicles, four on-station field research facilities, six Crop production facilities and four research handling facilities.	(1) NACRRI research physical facilities managed and maintained (three staff houses, one workshop). (2) NACRRI human resource managed and maintained. Hired labour, contract staff and casual laborers wages paid. (canteen, dormitories, estates and farm management).	Item	Spent
		211103 Allowances (Inc. Casuals, Temporary)	9,788
		221001 Advertising and Public Relations	5,639
		221002 Workshops and Seminars	5,519
		221008 Computer supplies and Information Technology (IT)	5,927
		221009 Welfare and Entertainment	2,728
		221011 Printing, Stationery, Photocopying and Binding	5,484
		222001 Telecommunications	3,920
		223004 Guard and Security services	9,799
		223005 Electricity	29,398
		224004 Cleaning and Sanitation	7,808
		226001 Insurances	1,229
		227001 Travel inland	5,907
		227004 Fuel, Lubricants and Oils	18,238
		228002 Maintenance - Vehicles	19,452
		228003 Maintenance – Machinery, Equipment & Furniture	7,795

### Reasons for Variation in performance

<b>Total</b>	<b>138,632</b>
Wage Recurrent	0
Non Wage Recurrent	138,632
<i>AIA</i>	0

### Arrears

#### Output: 99 Arrears

Reasons for Variation in performance	Item	Spent
		<b>Total</b>
		<b>0</b>
		Wage Recurrent
		0
		Non Wage Recurrent
		0

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	US\$ Thousand
		AIA	0
		<b>Total For SubProgramme</b>	<b>163,019</b>
		Wage Recurrent	0
		Non Wage Recurrent	163,019
		AIA	0

### Recurrent Programmes

#### Subprogram: 08 National Fisheries Resources Research Institute

##### Outputs Provided

#### Output: 01 Generation of agricultural technologies

		Item	Spent
1 Least-cost mycotoxin safe aqua feeds formulated.	- Final protocol for production, and guidelines for batch culture developed.	211103 Allowances (Inc. Casuals, Temporary)	6,101
1 technology for increasing shelf life live feed	- 1000 kgs of fresh BSF produced for making experimental fish feed and for running experiment to evaluate potential of different materials to preserve BSF	224001 Medical Supplies	736
1 broad spectrum probiotic combination to manage hatchery bacterial diseases, 2 fish feeds formulae based on local ingredients		224006 Agricultural Supplies	15,124
1 biocontrol agent for K		227004 Fuel, Lubricants and Oils	3,827
		<b>Total</b>	<b>25,788</b>
		Wage Recurrent	0
		Non Wage Recurrent	25,788
		AIA	0

##### Reasons for Variation in performance

#### Output: 02 Research extension interface promoted and strengthened

		Item	Spent
16,000,000 fish seed (Tilapia, catfish mirror carp and Barbus) will be produced.	- 417,584 quality sex reversed tilapia fry produced and availed to farmers.	221001 Advertising and Public Relations	1,880
1 CSO/NGO to work on HIV AIDs in fishing communities in place	Data along mukene value chain mobilised. Work still on going,	221008 Computer supplies and Information Technology (IT)	7,840
1 Analysis of women and youth participation in various value chains of small fish completed		221011 Printing, Stationery, Photocopying and Binding	2,708
		222001 Telecommunications	3,956
		227001 Travel inland	4,591
		227004 Fuel, Lubricants and Oils	3,600
		<b>Total</b>	<b>24,575</b>
		Wage Recurrent	0
		Non Wage Recurrent	24,575
		AIA	0

##### Reasons for Variation in performance

#### Output: 04 Agricultural research capacity strengthened

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
16,500 brood stocks of 4 farmer preferred fish species stocked	1) 369,534 quality sex reversed tilapia fry produced and availed to farmers.	<b>Item</b>	<b>Spent</b>
32 fish hatchery operators trained		211103 Allowances (Inc. Casuals, Temporary)	27,084
6,000,000 sex reversed tilapia fry	2) 109568 Nile tilapia, 30200 African catfish, 1500 mirror carpseed produced.	221001 Advertising and Public Relations	4,135
		221006 Commissions and related charges	10,000
		221008 Computer supplies and Information Technology (IT)	1,912
		221009 Welfare and Entertainment	7,184
		221011 Printing, Stationery, Photocopying and Binding	2,536
		222001 Telecommunications	3,880
		222003 Information and communications technology (ICT)	11,787
		223004 Guard and Security services	11,759
		223005 Electricity	27,037
		223006 Water	13,619
		224004 Cleaning and Sanitation	11,592
		226001 Insurances	3,532
		227001 Travel inland	5,485
		227004 Fuel, Lubricants and Oils	9,781
		228001 Maintenance - Civil	9,599
		228002 Maintenance - Vehicles	26,815
		228003 Maintenance – Machinery, Equipment & Furniture	15,604

### Reasons for Variation in performance

<b>Total</b>	<b>203,341</b>
Wage Recurrent	0
Non Wage Recurrent	203,341
AIA	0
<b>Total For SubProgramme</b>	<b>253,703</b>
Wage Recurrent	0
Non Wage Recurrent	253,703
AIA	0

### Recurrent Programmes

#### Subprogram: 09 National Forestry Resources Research Institute

#### Outputs Provided

#### Output: 01 Generation of agricultural technologies

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
10 Endangered medicinal and timber tree species conserved ,3 seed stands of three citrus varieties established in Kifu Research Forest,10 ha of forest research trials managed,1 protocol for Production of healthy Citrus fruit seedlings, 5 acre of National	<p>1. 5 high values species with high medicinal value (Zanthoxylum, Prunus africana, Kigelia africana, Olea,spp and Carisa edulis) conserved in an arboretum at Kifu station .</p> <p>2) 6 acres of multi-locational shea trials (breeding seed orchards) maintained.</p> <p>3) 3.5 ha of Calliandra seed stands at Kifu maintained for seed production.</p> <p>4) Designs of 1 type of value added woodwaste product (Resin treated table) developed.</p> <p>5) Bamboo culms harvested and seasoning ongoing. - 22,000 high quality clonal eucalyptus plantlets raised</p>	<p><b>Item</b></p> <p>221002 Workshops and Seminars</p> <p>224006 Agricultural Supplies</p> <p>227001 Travel inland</p>	<p><b>Spent</b></p> <p>2,400</p> <p>1,924</p> <p>564</p>

### Reasons for Variation in performance

<b>Total</b>	<b>4,887</b>
Wage Recurrent	0
Non Wage Recurrent	4,887
AIA	0

### Output: 02 Research extension interface promoted and strengthened

Information on various forestry research technologies delivered to stakeholders along the forestry resources value chain enhanced through reaching out to five hundred thousand(500,000) stakeholders using various mechanisms.	<p>1. Engagements with 10 key stakeholders in the paper industry ongoing.</p> <p>2) 3 sets of resin-treated tables developed from wood waste ready for uptake.</p> <p>3) 48 value chain actors (27 seed collectors &amp; 21 nursery operators) trained in Calliandra seed quality assurance.</p>	<p><b>Item</b></p> <p>221001 Advertising and Public Relations</p> <p>221008 Computer supplies and Information Technology (IT)</p>	<p><b>Spent</b></p> <p>3,985</p> <p>8,679</p>
---	--	---	---

### Reasons for Variation in performance

<b>Total</b>	<b>12,664</b>
Wage Recurrent	0
Non Wage Recurrent	12,664
AIA	0

### Output: 04 Agricultural research capacity strengthened

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
i)-70 staff trained in teamwork building and Accountability and research proposal development.	2 state-of-the-art screen houses for massive Hass avocado production established	<b>Item</b>	<b>Spent</b>
ii)-Institute research capacity strengthened through advisory committee guidance	(i) Institute staff accorded guidance by NaFORRI management team and completed NaFORRI 5-year Strategic plan 2023/4 to 2027/28; (ii) Staff guided on project proposal framework in NARO by the Grants Office; (iii) An inventory of Off budget projects implemented at NaFORRI since 1999 taken; (iv) Staff guided on how to improve performance and good work ethics by NARO PARI Directors forum; (v) staff welfare safety improved through provision of office break tea, emergency first aid and counselling by COVID-19 Mukono task force .(vi) Recommendations on improvement of research delivery made by Advisory committee members (vi) Management team ( Director,program leaders/PIs & Unit heads) participated in NARO-Wide quartely Review & planning workshop Two green houses and nursery infrastructure at NaFORRI operational; 2 state-of-the-art screen houses for massive Hass avocado production established	211103 Allowances (Inc. Casuals, Temporary)	12,112
		221002 Workshops and Seminars	4,599
		221009 Welfare and Entertainment	3,183
		221011 Printing, Stationery, Photocopying and Binding	3,770
		222001 Telecommunications	2,000
		222002 Postage and Courier	188
		222003 Information and communications technology (ICT)	3,929
		223004 Guard and Security services	17,459
		223005 Electricity	39,968
		224004 Cleaning and Sanitation	19,319
		224005 Uniforms, Beddings and Protective Gear	1,920
		227001 Travel inland	4,219
		227004 Fuel, Lubricants and Oils	13,561
		228001 Maintenance - Civil	9,699
		228002 Maintenance - Vehicles	19,130
		228003 Maintenance – Machinery, Equipment & Furniture	9,652

### Reasons for Variation in performance

<b>Total</b>	<b>164,708</b>
Wage Recurrent	0
Non Wage Recurrent	164,708
AIA	0
<b>Total For SubProgramme</b>	<b>182,259</b>
Wage Recurrent	0
Non Wage Recurrent	182,259
AIA	0

### Recurrent Programmes

#### Subprogram: 10 National Livestock Resources Research

#### Outputs Provided

#### Output: 01 Generation of agricultural technologies

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
1) Three livestock laboratories and one forage conservation facility maintained. 1 variety of lab developed 2 Vaccine molecules developed	1. A technical preliminary vaccine evaluation report written and submitted to MAAIF  2. Run Most SPBE tests for serotypes O,A Sat1 and Sat2 for the vaccine experiments  3) Coordinating running of VNT resultst from UK  4) Acquired cell culture plates and cell culture media to start the cell culture process 5) collected and archived more 15 viruses  5) Acquired a cDNA fmd specific kit and can start the virus characterization stage.  6) Optimized, serviced and calibrated all high tech equipment in the IADL lab  4) Whole genome sequences of Namayingo and Soroti viruses analysed for the development of 2 ASF vaccine candidates for evaluation for performance in laboratory trials.  5) Testing not done due to procurement delays and Packaging not done due to procurement delays.	<b>Item</b> 221002 Workshops and Seminars 221006 Commissions and related charges 221017 Subscriptions 223004 Guard and Security services 223005 Electricity 224001 Medical Supplies 224004 Cleaning and Sanitation 224005 Uniforms, Beddings and Protective Gear 224006 Agricultural Supplies 225001 Consultancy Services- Short term 228001 Maintenance - Civil 228002 Maintenance - Vehicles 228003 Maintenance – Machinery, Equipment & Furniture	<b>Spent</b> 488,914 11,499 28,840 77,273 125,385 1,090,061 90,169 87,571 1,135,907 170,000 455,000 184,278 175,066
		<b>Total</b>	<b>4,119,962</b>
		Wage Recurrent	0
		Non Wage Recurrent	4,119,962
		AIA	0

**Output: 04 Agricultural research capacity strengthened**



# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
1) Three livestock laboratories and one forage conservation facility maintained. 3. Four livestock production facilities maintained. 4. Six research handling facilities maintained	Livestock research infrastructure maintained. These include the following: 1) Three livestock laboratories and one forage conservation facility maintained. 2) Two on-station field research facilities maintained 3) Four livestock production facilities 4) Six handling facilities	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221001 Advertising and Public Relations 221002 Workshops and Seminars 221008 Computer supplies and Information Technology (IT) 221009 Welfare and Entertainment 221011 Printing, Stationery, Photocopying and Binding 221012 Small Office Equipment 223005 Electricity 224004 Cleaning and Sanitation 226001 Insurances 227001 Travel inland 227004 Fuel, Lubricants and Oils 228002 Maintenance - Vehicles	<b>Spent</b> 71,999 5,880 2,944 9,579 9,093 5,484 1,032 5,639 11,471 1,229 3,375 9,579 17,295

### Reasons for Variation in performance

<b>Total</b>	<b>154,598</b>
Wage Recurrent	0
Non Wage Recurrent	154,598
AIA	0
<b>Total For SubProgramme</b>	<b>4,274,560</b>
Wage Recurrent	0
Non Wage Recurrent	4,274,560
AIA	0

### Recurrent Programmes

#### Subprogram: 11 National Semi arid Resources Research

#### Outputs Provided

#### Output: 01 Generation of agricultural technologies

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	US\$ Thousand
20 cotton strain lines evaluated on 3 stations [Lira, Arua and Kasese] for yield, fibre quality attributes, quality oil and protein content. A well Maintained NaSARRI's Corporate Image promoted along various value chains of stakeholders in the region.	1) 20 strain lines were planted for evaluation at NaSARRI, Kasese and Nebbi for yield, fibre quality attributes, quality oil and protein content. Data collection and harvesting was only at NaSARRI.  2) Preliminary analysis has indicated that the average square date was at 35 days after planting, flowering was at 65 days while the average boll burst was at 128 days after planting. Plant height average was at 110 cm. Harvesting has been completed at NaSARRI only..	<b>Item</b> 227001 Travel inland 227004 Fuel, Lubricants and Oils	<b>Spent</b> 15,834 7,010

### Reasons for Variation in performance

<b>Total</b>	<b>22,844</b>
Wage Recurrent	0
Non Wage Recurrent	22,844
AIA	0

### Output: 04 Agricultural research capacity strengthened

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Item	Spent
A well Maintained NaSARRI's Corporate Image promoted among stakeholders across the agro ecological zone. Increased public awareness about the use of improved technologies . Four (4) advisory and sixteen (16 ) committee meetings conducted.	1) NaSARRI's Corporate Image promoted among stakeholders thru field days 2) NASAARI research agenda popularized and strengthened thru two dissemination workshop and five committee meeting facilitated	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221001 Advertising and Public Relations 221002 Workshops and Seminars 221009 Welfare and Entertainment 221011 Printing, Stationery, Photocopying and Binding 222001 Telecommunications 222003 Information and communications technology (ICT) 223004 Guard and Security services 223005 Electricity 224004 Cleaning and Sanitation 226001 Insurances 227001 Travel inland 227004 Fuel, Lubricants and Oils 228002 Maintenance - Vehicles 273102 Incapacity,death benefits and funeral expenses	<b>Spent</b> 13,412 3,651 10,556 7,275 4,119 3,972 27,884 11,917 19,541 7,749 1,144 3,258 5,673 15,374 7,624

### Reasons for Variation in performance

<b>Total</b>	<b>143,148</b>
Wage Recurrent	0

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
		Non Wage Recurrent	143,148
		AIA	0
		<b>Total For SubProgramme</b>	<b>165,992</b>
		Wage Recurrent	0
		Non Wage Recurrent	165,992
		AIA	0

### Recurrent Programmes

#### Subprogram: 12 National Laboratories Research

##### Outputs Provided

#### Output: 01 Generation of agricultural technologies

	Item	Spent
3 Value added products of maize, beans, soybean for commercialization.	1. Two commercial instant maize powder and snack products;	211103 Allowances (Inc. Casuals, Temporary)
1 botanical and bio-control pest control system tested.	2). One precooked puffed bean product;	222001 Telecommunications
Groundnut decorticator available.	3). Five banana NARITA hybrids are ready to go to onfarm for evaluation and DUS data correction	223005 Electricity
8 climate smart technologies utilized.	4). One protocol for establishment of community seed banks.	223006 Water
2000 banana genotypes Hybrid seed generated	• BTracT for tracking banana crosses from crossing fields through Tissue Culture lab to the evaluation fields.	224006 Agricultural Supplies
	5). Musabase is for digitalised banana data collection has been implemented at NBRP	227001 Travel inland
		227004 Fuel, Lubricants and Oils
		228003 Maintenance – Machinery, Equipment & Furniture

### Reasons for Variation in performance

<b>Total</b>	<b>331,791</b>
Wage Recurrent	0
Non Wage Recurrent	331,791
AIA	0

#### Output: 02 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	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
Strengthened capacity through Research extension interface promotions	1) . One high quality smoked fish processing business centres using NAROFIK-3 Kilns;	<b>Item</b>	<b>Spent</b>
		211103 Allowances (Inc. Casuals, Temporary)	33,061
		221002 Workshops and Seminars	21,120
	2) Fifty motorized maize shellers; 15 Hand cranked maize shellers; 45 tripple bags; 50 units of 2 wheel tractors; 9 animal drawn and CA planters; 24 ox-carts and 6 NAROFIK-3 fish kilns4 enterprises under incubation (Dan-Agro - tomato powder, Lexico - gluten free products, Jackfruit powder, fortified fish & beans powder)	221011 Printing, Stationery, Photocopying and Binding	4,360
		224006 Agricultural Supplies	297,941
		227001 Travel inland	48,499
	3) Three citrus model village groups etsblished in Kumi, Ngora and Soroti;		
	4. Four maize stem borer IPM platforms in Kayunga, Mbale and Bulambuli		
5. Five mechanization uptake platforms inAdjuman, Gulu and Kitigum districts and 3 maize shelling centres in eastern Uganda and 2 Integrated crop-livestock production system using ram pump (NARORAMP-2) in Kabarole district			
6). Two (postharvest handling centres in Kyamutakasa and Kapeeka, Nakaseke district) and 199 Farmers trained on grain post harvest handling and storage technologies in Nakaseke district (Kyamutakasa - 40 farmers; Kapeeka - 45; Bulwadda - 46; Kapeeke - 48; Magoma - 20).			
7) Extension workers and farmers trained on bicontrol agents for management of T. absoluta, Buseolla and Chilo.			
8) Knowledge and skills of 12 farmers, 36 ox-drivers, 12 artisans and 8 extension staff from Wol, Paimol, Lokole and Arum sub counties in Agago district enhanced in planting, weeding and transport using oxen			

### Reasons for Variation in performance

<b>Total</b>	<b>404,981</b>
Wage Recurrent	0
Non Wage Recurrent	404,981

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	US\$ Thousand
		AIA	0

### Output: 04 Agricultural research capacity strengthened

Institutional research capacity strengthened through four stake holder guidance engagements and four routine maintenance of research facilities, equipment, vehicles and support.	- Office equipment, field machinery & laboratory equipment at the institute maintained. - Human resources facilitated and strengthened.	Item	Spent
		211103 Allowances (Inc. Casuals, Temporary)	55,959
		221002 Workshops and Seminars	26,397
		221003 Staff Training	13,438
		221008 Computer supplies and Information Technology (IT)	13,765
		221009 Welfare and Entertainment	7,474
		221011 Printing, Stationery, Photocopying and Binding	8,276
		221012 Small Office Equipment	564
		222001 Telecommunications	3,456
		222002 Postage and Courier	94
		223004 Guard and Security services	24,234
		223005 Electricity	29,917
		224004 Cleaning and Sanitation	19,757
		227001 Travel inland	7,169
		227004 Fuel, Lubricants and Oils	30,304
		228002 Maintenance - Vehicles	44,810
		228003 Maintenance – Machinery, Equipment & Furniture	8,744
		228004 Maintenance – Other	3,054

### Reasons for Variation in performance

<b>Total</b>	<b>297,414</b>
Wage Recurrent	0
Non Wage Recurrent	297,414
AIA	0
<b>Total For SubProgramme</b>	<b>1,034,186</b>
Wage Recurrent	0
Non Wage Recurrent	1,034,186
AIA	0

### Recurrent Programmes

#### Subprogram: 13 Abi ZARDI

#### Outputs Provided

#### Output: 01 Generation of agricultural technologies

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
4 advisory committee, PARI directors' forum meetings and 2 planning reviews held.	1) Three advisory committee meetings conducted	<b>Item</b> 221006 Commissions and related charges	<b>Spent</b> 8,351
Two Cassava composites products developed	2) Four PARI directors' forum meetings attended to guide policy decisions at the institute	222001 Telecommunications 224006 Agricultural Supplies	768 21,159
One nutrition platform for nutrient enhanced cassava products developed	3) One review and planning meetings held at Abi ZARDI to guide implementation of research activities	227001 Travel inland	14,251
Well maintained institutional research assets	4). The extent of investment and utilisation of cassava as food and feed among different stakeholders and the contribution of research documented	228003 Maintenance – Machinery, Equipment & Furniture	24,178
	5). High Quality Cassava Flour (HQCF) from four cassava varieties (Narocas1, Nase19, Nase14 and Nase3) can variably substitute wheat flour upto 30% in leavened bread without compromising sensory attributes and significantly increase mineral content		
	6). An assessment for apiary conducted at the institute technology demonstration site at Got Ali, Nebbi		
	7). Documentation of the contribution of research by NARO to the development of the cassava value chain conducted among different stakeholders in West Nile		
	8). 5.5 tons of Longe 5D seed harvested and cleaned 7). 400 kg of bean seeds harvested and cleaned.		

### Reasons for Variation in performance

<b>Total</b>	<b>68,706</b>
Wage Recurrent	0
Non Wage Recurrent	68,706
<i>AIA</i>	0

### Output: 02 Research extension interface promoted and strengthened

At least two cassava based products disseminated to technology uptake pathways in West Nile	1) One nutrition platform meeting held on locally available nutrient rich food products for school-going children	<b>Item</b> 221001 Advertising and Public Relations 221002 Workshops and Seminars	<b>Spent</b> 3,289 10,996
Eight seminars conducted on nutrition focusing on nutrient enhanced research products	2) The extent of investment and utilisation of cassava as food and feed among different stakeholders and the contribution of research documented.	221008 Computer supplies and Information Technology (IT) 221011 Printing, Stationery, Photocopying and Binding	4,799 950

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
------------------------	---	--	---------------

### Reasons for Variation in performance

<b>Total</b>	<b>20,035</b>
Wage Recurrent	0
Non Wage Recurrent	20,035
<i>AIA</i>	0

### Output: 04 Agricultural research capacity strengthened

Two field days organized to show case research outputs and share experience. Enhancement of an appropriate clean working environment.	1) Cassava composite products exhibited at the World Science Day celebrations at Kyambogo University.	<b>Item</b>	<b>Spent</b>
Four monitoring sessions conducted.	3). Established field demonstrations of beans and maize.	221103 Allowances (Inc. Casuals, Temporary)	6,056
	4) Abi ZARDI human resources, financial resources, and physical resources maintained	221002 Workshops and Seminars	576
	5).Four monitoring sessions conducted.	221008 Computer supplies and Information Technology (IT)	3,824
	6) Three beneficiary group sensitized and three experimental field selected and prepared.	221009 Welfare and Entertainment	1,819
		222001 Telecommunications	768
		223004 Guard and Security services	5,759
		223005 Electricity	1,920
		223006 Water	384
		224004 Cleaning and Sanitation	3,824
		226001 Insurances	384
		227001 Travel inland	3,797
		227004 Fuel, Lubricants and Oils	2,874
		228001 Maintenance - Civil	960
		228002 Maintenance - Vehicles	10,522
		228003 Maintenance – Machinery, Equipment & Furniture	1,639
		273102 Incapacity,death benefits and funeral expenses	1,920

### Reasons for Variation in performance

<b>Total</b>	<b>47,024</b>
Wage Recurrent	0
Non Wage Recurrent	47,024
<i>AIA</i>	0
<b>Total For SubProgramme</b>	<b>135,765</b>
Wage Recurrent	0
Non Wage Recurrent	135,765
<i>AIA</i>	0

### Recurrent Programmes

#### Subprogram: 14 Bulindi ZARDI

#### Outputs Provided

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	US\$ Thousand
<b>Output: 01 Generation of agricultural technologies</b>			
50% increase in banana productivity	1) Established that there is a 114% banana productivity improvement after increased by manure application to a 1:1 ratio with top soil.	<b>Item</b>	<b>Spent</b>
Groundnut lines segregated against four attributes.		211103 Allowances (Inc. Casuals, Temporary)	6,912
Reduced Rice yield loss by 50%		221002 Workshops and Seminars	4,320
		222001 Telecommunications	4,920
one effective bio-fungicide identified	2) Established that there is a 100% yield improvement (100-250 fruits per tree per season up from 10 fruits per tree per season) under all three top soil amendments of Top soil: Manure: Sand amendment of 3:1:1, 2:1:2, & 1:1:1	223004 Guard and Security services	9,840
Status of fruit fly species in the LACZ determined.		223005 Electricity	9,840
		227001 Travel inland	2,720
			<b>Total</b>
			<b>38,550</b>
			Wage Recurrent
			0
			Non Wage Recurrent
			38,550
			AIA
			0
<b>Output: 02 Research extension interface promoted and strengthened</b>			
5 research technologies promoted.	1) 525 farmers trained (140 farmers trained good agronomic practices for rice, vegetables, bananas and beans.	<b>Item</b>	<b>Spent</b>
Strengthening research demonstrations for uptake among farmers and early adopters for increased production.		221001 Advertising and Public Relations	6,832
	2) Capacity building for 30 farmers in seed banking and water harvesting in Kyagwali refuge settlement;		
	3) 40 farmers and 10 community based facilitators from Kagadi and Kiryandongo given guided tours of research activities and crop/livestock demos;		
	4) 280 farmers (113 men, 167 women) trained on Practical training plant nutrition and crop protection in Nyamiganda, Mukunyu, Malembo, Kentomi and Mukarange villages in collaboration with Action against Hunger (AFC);		
	5) 25 Farmers (10 men and 15 women) trained in financial management and business administration for community seed businesses)		
	6) 10 vegetable (Green pepper, tomatoes, egg plant, cabbage, pumpkin, butternuts, nightshades, ethiopian mustard, amaranthus, and african egg plant), 1 Maize (MM3) demo established; 323		



# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

farmers and student [110 farmers received guided tours of onstation demos for rice, vegetables, bananas and bean; 13 crop (1 maize-MM3, 1 Maksoy and 10 assorted vegetables) onstation demos maintained;

7) 40 farmers and 10 community based facilitators from Kagadi and Kiryandongo given guided tours of research activities and crop/livestock demos,

8) 28 students (23M, 5F) received information through guided tours,

9) 10 Farmers (9M, 1F) accessed different technologies;

10) 5 crop and pasture (beans, soybean, maize, ground nuts and pastures) onstation demos were planted for 2021A), 54 Farmers (24 men and 29 women) received training and guided tour on improved agricultural technologies and information at the institute.

11) 71 farmers from kyangwali and host communities in kikuube were trained in farming as a business and group dynamics in collaboration with Action against hunger.

13) 2 crop (banana, and coffee) onstation demos maintained .

### *Reasons for Variation in performance*

<b>Total</b>	<b>6,832</b>
Wage Recurrent	0
Non Wage Recurrent	6,832
<i>AIA</i>	0

### **Output: 04 Agricultural research capacity strengthened**

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	US\$ Thousand
3 stakeholder meetings conducted and feedback disseminated to the respective recipients	Strengthening the human resource, financial and institutional management capacity of BUZARDI in delivery of research outputs	<b>Item</b>	<b>Spent</b>
		221002 Workshops and Seminars	4,139
		221009 Welfare and Entertainment	4,092
		221011 Printing, Stationery, Photocopying and Binding	1,763
		222001 Telecommunications	1,968
		222002 Postage and Courier	20
		223004 Guard and Security services	6,888
		223005 Electricity	31,487
		224004 Cleaning and Sanitation	7,859
		224005 Uniforms, Beddings and Protective Gear	10,824
		226001 Insurances	1,259
		227001 Travel inland	1,828
		227004 Fuel, Lubricants and Oils	3,441
		228002 Maintenance - Vehicles	26,530
		228003 Maintenance – Machinery, Equipment & Furniture	986
		228004 Maintenance – Other	303
		273102 Incapacity, death benefits and funeral expenses	984

### Reasons for Variation in performance

<b>Total</b>	<b>104,369</b>
Wage Recurrent	0
Non Wage Recurrent	104,369
AIA	0

### Arrears

#### Output: 99 Arrears

### Reasons for Variation in performance

Item	Spent
<b>Total</b>	<b>0</b>
Wage Recurrent	0
Non Wage Recurrent	0
AIA	0
<b>Total For SubProgramme</b>	<b>149,751</b>
Wage Recurrent	0
Non Wage Recurrent	149,751
AIA	0

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
<i>Recurrent Programmes</i>			
<b>Subprogram: 15 Kachwekano ZARDI</b>			
<i>Outputs Provided</i>			
<b>Output: 01 Generation of agricultural technologies</b>			
6 onstation ponds rehabilitated and maintained in functional state	1) Three fish strains of Nile Tilapia (from Lakes Kayumbu, Kioga and Albert) characterised and maintained (provision 50kg of feed and security) at Kyanamira fish facility 2) 6 onstation ponds rehabilitated and a Dairy herd of 24 maintained.	<b>Item</b>	<b>Spent</b>
2 breeding bucks accessed		221011 Printing, Stationery, Photocopying and Binding	590
Ten Soil fertility profiles developed		224001 Medical Supplies	19,973
3 onstation orchards rehabilitated		227001 Travel inland	9,985
		227004 Fuel, Lubricants and Oils	1,060
			<b>Total</b>
			<b>31,608</b>
			Wage Recurrent
			0
			Non Wage Recurrent
			31,608
			<i>AIA</i>
			0
<b>Output: 02 Research extension interface promoted and strengthened</b>			
3 new potato varieties promoted and tested on the market	1) 200 farmers reached with NARO technologies	<b>Item</b>	<b>Spent</b>
Baseline information on the performance of the Buck exchange Programme obtained	2) supplied to farmers. 120,000 minitubers generated and 10 tonnes of basic seed produced.	221001 Advertising and Public Relations	5,416
	3) 1000 apple seedlings raised.	221011 Printing, Stationery, Photocopying and Binding	1,854
	4) Three radio talk shows conducted involving promotion of potato technologies,	224001 Medical Supplies	5,456
	5) One manual on integrated soil fertility management developed,	224006 Agricultural Supplies	3,479
	6) Five brochures developed. On contour bench terracing, construction of check dams, contour retention trechnes, grass bands and rehabilitation of degraded terraces	227001 Travel inland	11,481
	(7) 50 farmers mobilized ond one field day conducted	227004 Fuel, Lubricants and Oils	787
	(8). 44 farmers (30 males, 14 females) exposed and back stopped with apple technologies		
	(9). Three (3) consultative meetings held, attended by 44 (Kabale-14, Kisoro-13 and Rukungiri - 17) different value chain		

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

actors including progressive dairy farmers, dairy processors and value addition, cooperative marketing association representatives, DVOs, DPMOs, OWC, among others. First draft of technical report written to summarise key issues discussed during meetings

(10). 100 farmers mobilised through 2 farmer field days to promote NAROPOT 1 and 3 in Rubanda and Knungu districts  
 (11). Atleast 80 farmers reached through exhibition of apple and potato technologies during the 2020 world food day exhibition

(12). 10 seed demonstration fields were harvested and results of the demonstration indicated yield increase with production range of 14-37T/ha depending on the location and the variety. Seed production Manual was published and 400 copies printed for distribution to farmers

(13). trained 300 farmers in seed potato production

(14) 2 video documentaries recorded (One on agronomic practices, best harvesting practices and grading of potatoes, One on Climate Smart Agriculture)

(15.) Generated 20 tones of basic seed, 29,300 minitubers and trained 300 farmers in seed potato production

16 ) Five farmer groups selected, Kachpot 1 and Rwangume seed distributed in partnership with ADREAM (local NGO)

### *Reasons for Variation in performance*

<b>Total</b>	<b>28,474</b>
Wage Recurrent	0
Non Wage Recurrent	28,474
<i>AIA</i>	0

### **Output: 04 Agricultural research capacity strengthened**

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
four (4) consultative engagements, four (4) routine research infrastructure, vehicles machinery and equipment maintained.	Institutional research capacity Enhanced through one (1) consultative engagements,  (2) routine research infrastructure, vehicles machinery and equipment maintained.  3) Nursery bed maintenance, orchard management (pruning, defoliation, bending and staking, spraying, ),  supplied to farmers. 120,000 minitubers generated and 10 tonnes of basic seed produced.  1000 apple seedlings raised	<b>Item</b>	<b>Spent</b>
		211103 Allowances (Inc. Casuals, Temporary)	6,152
		221002 Workshops and Seminars	1,679
		221009 Welfare and Entertainment	3,912
		221011 Printing, Stationery, Photocopying and Binding	2,071
		222001 Telecommunications	2,492
		222003 Information and communications technology (ICT)	5,077
		223004 Guard and Security services	3,904
		223005 Electricity	8,295
		223006 Water	4,880
		224004 Cleaning and Sanitation	6,437
		226001 Insurances	976
		227001 Travel inland	3,418
		227004 Fuel, Lubricants and Oils	5,890
		228001 Maintenance - Civil	4,387
228002 Maintenance - Vehicles	7,602		
228003 Maintenance – Machinery, Equipment & Furniture	4,400		

### Reasons for Variation in performance

<b>Total</b>	<b>71,570</b>
Wage Recurrent	0
Non Wage Recurrent	71,570
AIA	0
<b>Total For SubProgramme</b>	<b>131,652</b>
Wage Recurrent	0
Non Wage Recurrent	131,652
AIA	0

### Recurrent Programmes

#### Subprogram: 16 Mukono ZARDI

#### Outputs Provided

#### Output: 01 Generation of agricultural technologies

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	US\$ Thousand
Four (04) technologies generated (1 best legume for milk yield selected dosage rate DE application for odour reduction selected, and 3 management technologies)	Twenty (28) demonstration plots were established to showcase different technologies including the effect of different fertilizers on cabbage and French bean growth; different planting spacing for cucumber and peas; and the use of stones and pitcher irrigation technologies in urban farming at Ntawo. Maintained 0.5 acres of coffee demonstration plots at Ntawo and a 2 acre plot at Kamenyamiggo; 0.75 acres of coffee mother garden at Ntawo and 0.75 acres at Kamenyamiggo, and 0.25 acres of cocoa at Ntawo.	<b>Item</b> 221011 Printing, Stationery, Photocopying and Binding 222001 Telecommunications 223004 Guard and Security services 223005 Electricity 223006 Water 224001 Medical Supplies 227001 Travel inland 227004 Fuel, Lubricants and Oils	<b>Spent</b> 6,888 4,960 24,799 49,326 5,952 9,942 14,112 14,740

### Reasons for Variation in performance

<b>Total</b>	<b>130,719</b>
Wage Recurrent	0
Non Wage Recurrent	130,719
AIA	0

### Output: 04 Agricultural research capacity strengthened

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Item	Spent
2 Multi-stake holder innovation platform in Seed and seedling Production and Marketing established. One Multi-stake holder innovation platform in Seed One policy to guide decision making.	1) Aailed 6300 KR clonal plantlets aailed to msip farmers from sembabule, Mukono, Mityana, Kayunga, Namayingo and Masaka; 21,000 coffee cuttings have been put in cages but not yet ready for release; 415 Kgs of coffee beans sold  2) Two acres of pasture maintained for silage making; 1.5 acre of Napier grass and 0.5 acre of lablab. 4 acres have been ploughed waiting for planting pasture (2acres of Napier, 1 acreof Lab-Lab and 1acreof cloris gayana) and these will be mainly for seed multiplication. Ten farmers have been trained on establishment and usage of these different types of pastures. This on -station demonstration attracted 20 farmers and 10 students.	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221001 Advertising and Public Relations 221008 Computer supplies and Information Technology (IT) 221009 Welfare and Entertainment 222002 Postage and Courier 224004 Cleaning and Sanitation 226001 Insurances 228001 Maintenance - Civil 228002 Maintenance - Vehicles 228003 Maintenance – Machinery, Equipment & Furniture 228004 Maintenance – Other 273102 Incapacity,death benefits and funeral expenses	<b>Spent</b> 20,675 5,856 20,468 4,547 586 28,362 1,378 25,514 24,565 10,843 2,440 2,952

### Reasons for Variation in performance

<b>Total</b>	<b>148,185</b>
Wage Recurrent	0
Non Wage Recurrent	148,185
AIA	0
<b>Total For SubProgramme</b>	<b>278,904</b>

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
		Wage Recurrent	0
		Non Wage Recurrent	278,904
		AIA	0

### Recurrent Programmes

#### Subprogram: 17 Ngetta ZARDI

#### Outputs Provided

##### Output: 01 Generation of agricultural technologies

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Item	Spent
Soil seed bank estimation technique, integrated weed management technologies for maize developed	1) Established that the green house germination technique is the most effective to estimate soil seed bank, followed by cloth bag method. Flootation method is not suitable . 2) One incidence map on severity updated on Alternana brown spot disease, Pseudoerosporal leaf and fruit spot and Anthracnose	211103 Allowances (Inc. Casuals, Temporary)	6,827
2 incidence maps (1 for citrus leaf and fruit spot and 1 for gummosis disease) updated		221001 Advertising and Public Relations	551
2 integrated disease management options for citrus diseases validated		221002 Workshops and Seminars	6,613
1		221011 Printing, Stationery, Photocopying and Binding	460
		223005 Electricity	4,761
		224001 Medical Supplies	5,065
		224006 Agricultural Supplies	7,529
		227001 Travel inland	24,818
		227004 Fuel, Lubricants and Oils	1,080

#### Reasons for Variation in performance

<b>Total</b>	<b>57,704</b>
Wage Recurrent	0
Non Wage Recurrent	57,704
AIA	0

##### Output: 02 Research extension interface promoted and strengthened

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Item	Spent
Improved stakeholder awareness through demonstrations and exhibitions for proven agricultural research technologies enhancing; production practices on and off -station	5 technology demonstrations ( beans, groundnuts, sorghum, soy beans, millet) established on-station	211103 Allowances (Inc. Casuals, Temporary)	3,361
		221002 Workshops and Seminars	414
		221011 Printing, Stationery, Photocopying and Binding	346
		224006 Agricultural Supplies	5,023
		227001 Travel inland	4,245
		227004 Fuel, Lubricants and Oils	1,751

#### Reasons for Variation in performance

<b>Total</b>	<b>15,140</b>
Wage Recurrent	0
Non Wage Recurrent	15,140
AIA	0

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
<b>Output: 04 Agricultural research capacity strengthened</b>			
Institutional research capacity strengthened through 4 stakeholder consultative meetings and routine maintenance of research facilities, equipment and machinery	1) Ngetta ZARDI facilitated to undertake zonal mandate. Conducted routine maintenance of vehicles, research facilities, equipment and machinery 2) 22 LSB groups strategically linked to QDS suport services and networks	<b>Item</b>	<b>Spent</b>
		211103 Allowances (Inc. Casuals, Temporary)	3,784
		221011 Printing, Stationery, Photocopying and Binding	1,622
		223004 Guard and Security services	15,799
		223005 Electricity	5,158
		223006 Water	3,968
		224004 Cleaning and Sanitation	2,090
		227001 Travel inland	4,375
		227004 Fuel, Lubricants and Oils	3,965
		228002 Maintenance - Vehicles	17,294

### Reasons for Variation in performance

<b>Total</b>	<b>58,055</b>
Wage Recurrent	0
Non Wage Recurrent	58,055
AIA	0
<b>Total For SubProgramme</b>	<b>130,899</b>
Wage Recurrent	0
Non Wage Recurrent	130,899
AIA	0

### Recurrent Programmes

#### Subprogram: 18 Nabium ZARDI

#### Outputs Provided

#### Output: 01 Generation of agricultural technologies



# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
2 cereal and 2 legume crops promoted in NEAZ for sustainable food production and resilient agricultural practices, 30,000 seedlings of mango, citrus & clonal eucalyptus produced for sustainable afforestation and re-afforestation & 4 demo gardens established	1) Established 2 technology Demonstrations ( construction of wash stops and ridges) in Moroto and Serere for farmer learning ;	<b>Item</b>	<b>Spent</b>
		211103 Allowances (Inc. Casuals, Temporary)	5,806
		221011 Printing, Stationery, Photocopying and Binding	1,181
		224006 Agricultural Supplies	12,853
		227001 Travel inland	6,209
		227004 Fuel, Lubricants and Oils	3,184
	2) Information, education and communication (IEC) materials on sorghum varieties,		
	3) Labor saving technologies and seed processing poster and exhibition banner printed.		
	3) Managed the set demonstrations on ridges and wash stops in the two districts of Serere and Moroto,		
	4) Trained 50 farmers in Serere and Moroto on compost manure application for soil fertility improvement..		
	5) One mango mother garden established and maintained,		
	6) 1030 mango and 7,000 orange seedlings raised.		

### Reasons for Variation in performance

<b>Total</b>	<b>29,232</b>
Wage Recurrent	0
Non Wage Recurrent	29,232
AIA	0

**Output: 04 Agricultural research capacity strengthened**

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
Awareness among communities about the transmission, impact and control of brucellosis strengthened.	1) 5 acres of land prepared (cleared, and ploughed)	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary)	<b>Spent</b> 23,573
	2) 30 farmers trained on-station in pasture establishment and management	221001 Advertising and Public Relations 221002 Workshops and Seminars	1,958 5,519
	3) A total of 85 heads of cattle maintained on-station: Zebu (32 cows, 04 bulls and 09 calves); Sahiwal (02 bulls; 21 crosses); Friesians (03 cows, 05 calves and 09 crosses).	221009 Welfare and Entertainment 221011 Printing, Stationery, Photocopying and Binding 222002 Postage and Courier	1,819 2,115 234
	4) 60 , farmers from Moroto, Kaabong Napak, Kotido and Abim districts respectively) trained cattle herd nutrition and health management.	223004 Guard and Security services 223005 Electricity 224004 Cleaning and Sanitation 224005 Uniforms, Beddings and Protective Gear	9,317 8,571 4,489 2,361
	5) Experimental animals maintained on station (36 Mubende goats (28 females and 08 males). A total of 8 pigs (7 sows and 1 boar) maintained on station. 25 piglets produced and sold to farmers.	226001 Insurances 227001 Travel inland 227004 Fuel, Lubricants and Oils 228001 Maintenance - Civil	689 3,925 6,917 7,872
	6) Seroprevalence determined from Amudat District. Communities sensitized on brucellosis.	228002 Maintenance - Vehicles 228003 Maintenance – Machinery, Equipment & Furniture 273102 Incapacity,death benefits and funeral expenses	11,791 7,886 2,952

### Reasons for Variation in performance

<b>Total</b>	<b>101,990</b>
Wage Recurrent	0
Non Wage Recurrent	101,990
AIA	0
<b>Total For SubProgramme</b>	<b>131,222</b>
Wage Recurrent	0
Non Wage Recurrent	131,222
AIA	0

### Recurrent Programmes

#### Subprogram: 19 Mbarara ZARDI

#### Outputs Provided

#### Output: 01 Generation of agricultural technologies

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
Seven (7) production technologies and innovations generated for increased production and productivity	<p>1) Data collection on agronomic performance of bean crop under six nitrogen fixing shrubs completed. Two best nitrogen fixing shrubs that improve bean productivity identified. Gliricidia sepium and Tephrosia vogelli gave the highest yields of 266 kg/acre and 227 kg/acre respectively. A draft set of guidelines for training farmers on use of nitrogen fixing shrubs to increase bean productivity in SWAEZ developed.</p> <p>2) One prototype of a field test formalin test kit designed and available for validation and registration.</p> <p>3) One strategy for enhancing adoption of quality seed (bean, cassava, maize and pasture seed varieties) developed to address the nutrition, and income challenges amongst farmers in the 16 districts of South Western Agro Ecological Zone.</p> <p>4) In farmed fish, 100% of growth performance evaluated and 50% of data on profitability. Growth performance found to be 0.3 and 0.4 g/day in ponds and about 0.5g/day in tanks. Profitability index based net present value and initial investment based on station trials showed that farming small catfish is more profitable than that of Nile tilapia per m<sup>3</sup> of water used (ie PI was 1.2 and 1.1 for samll catfish and nile tilapia respectively.The project was cleaner ,affordable by women and youth groups who have limited rights to land and water resources.</p> <p>5) A total of 420 seedlings (300 coffee and 120 fruit seedlings ) disseminated to stakeholders in the zone.</p> <p>6) 55 tonnes of green chop fed to dairy cattle,assorted feed supplements fed to animals ;600 kg of salt,400 kg of soy meal, 40 kg of pig and dairy macro mixes.</p>	<b>Item</b>	<b>Spent</b>
		221011 Printing, Stationery, Photocopying and Binding	1,968
		222001 Telecommunications	4,960
		223004 Guard and Security services	9,876
		223005 Electricity	19,679
		223006 Water	14,759
227001 Travel inland	2,352		
227004 Fuel, Lubricants and Oils	1,965		
	228002 Maintenance - Vehicles	3,968	

### Reasons for Variation in performance

<b>Total</b>	<b>59,528</b>
Wage Recurrent	0

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
		Non Wage Recurrent	59,528
		AIA	0

### Output: 04 Agricultural research capacity strengthened

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Item	Spent
Eleven (11) technological innovations delivered to uptake pathways	technological innovations NARO technologies were delivered to uptake pathways.	211103 Allowances (Inc. Casuals, Temporary)	13,899
Four 4 technological innovation platforms established/supported	1) 21goat kids produced (13 male & 8 female), 3 goats availed (NTR) to the community for meat. 16 piglets (1 females +15 males) produced. 17 pigs (9 females and 8 male piglets disseminated	221001 Advertising and Public Relations	634
Six thousand two hundred (6200) planting materials for 8 priority improved crop delivered to uptake pathways	7 Calves produced (6 male & 1female), 23 heads of cattle(2 cows and 20 weaner bulls) availed to farmers	221006 Commissions and related charges	11,000
		221008 Computer supplies and Information Technology (IT)	3,929
		221009 Welfare and Entertainment	2,728
		221011 Printing, Stationery, Photocopying and Binding	2,115
		223004 Guard and Security services	11,807
		224004 Cleaning and Sanitation	5,915
		226001 Insurances	1,259
		227001 Travel inland	3,264
		227004 Fuel, Lubricants and Oils	9,838
		228001 Maintenance - Civil	5,952
		228002 Maintenance - Vehicles	10,332
		228003 Maintenance – Machinery, Equipment & Furniture	4,969

### Reasons for Variation in performance

<b>Total</b>	<b>87,643</b>
Wage Recurrent	0
Non Wage Recurrent	87,643
AIA	0
<b>Total For SubProgramme</b>	<b>147,170</b>
Wage Recurrent	0
Non Wage Recurrent	147,170
AIA	0

### Recurrent Programmes

#### Subprogram: 20 Buginyaya ZARDI

#### Outputs Provided

#### Output: 01 Generation of agricultural technologies

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
Models of crop residues based livestock feeds, efficacious ethno vet-medicinal plants for control of worms	(1) Forty two goats (11 indigenous and 31 improved Boer goat genotypes) maintained for breeding purposes at Bulegeni station. (2) In-vitro experiments revealed that effective time for 20 mg/l of Azadirachta indica and Tithonia diversifolia extracts on Heamonchus spp were 8 and 6 hours respectively. Phyto-chemical composition of Tithonia diversifolia and Azadirachta indica profiled. (3) Effective stocking and feeding management was tested. Growth rate averaged 3.6% and 4.5% BW; daily weight gain was 4.8 and 5g/day in the first and second trials respectively, on 35% Kajjansi feed. The stocks reached carrying capacity at 4kgm-3, with adults attaining 1.2kg in 8 months at Bulegeni.	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221002 Workshops and Seminars 224001 Medical Supplies 224006 Agricultural Supplies 227001 Travel inland 227004 Fuel, Lubricants and Oils 228002 Maintenance - Vehicles	<b>Spent</b> 14,135 9,815 23,309 57,563 24,049 10,048 20,178

### Reasons for Variation in performance

<b>Total</b>	<b>159,097</b>
Wage Recurrent	0
Non Wage Recurrent	159,097
AIA	0

**Output: 04 Agricultural research capacity strengthened**

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	US\$ Thousand
250 bags of improved OFSP vines and 15MT of planting material for commercial potato varieties delivered to uptake pathways, Increased apple productivity through capacity of 200 farmers and TOTs trained in best management practices of apples.	1) 700 bags of potato vines of Naspot 8 and Narospot 1 availed to farmers in Mayuge & Kamuli. 1 acre of potato seed multiplication garden established at Ikulwe	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary)	<b>Spent</b> 6,202
		221001 Advertising and Public Relations	984
		221006 Commissions and related charges	6,000
		221009 Welfare and Entertainment	2,728
		221011 Printing, Stationery, Photocopying and Binding	2,115
		221012 Small Office Equipment	195
		222001 Telecommunications	3,968
		223004 Guard and Security services	19,743
		223005 Electricity	17,743
		223006 Water	5,928
	224004 Cleaning and Sanitation	4,948	
	226001 Insurances	984	
	227001 Travel inland	3,264	
	227004 Fuel, Lubricants and Oils	6,885	
	228001 Maintenance - Civil	7,872	
	228002 Maintenance - Vehicles	13,756	
	228003 Maintenance – Machinery, Equipment & Furniture	3,943	
	228004 Maintenance – Other	1,464	
	273102 Incapacity, death benefits and funeral expenses	1,968	
	2) 40% increased survival of suitable varieties for wide banana multiplication and production in Mt. Elgon		
	3) Alternate use of fungicides applied as cleanup and control during the season limits effects of fungal diseases in arabica coffee.		
	4) 6 tonnes of ripe cherry expected from 10 acres of productive field across Buginyanya and Bulegeni stations		
	5) 20 apple orchards maintained.		
	6) Eucalyptus woodlots maintained, melanii woodlot maintained		
	7) 9200 seedlings maintained on the tree nursery at Buginyanya station.		
	8) 1500 mother TC plants ordered and 3,200 minitubers of assorted potato varieties established in screen house		
	9) 1 screen house cultivation bed prepared for RACs establishment.		
	10) 60 kgs of Chloris gayana and 30 bags of NARONAP3 availed for farmers in Bulambuli and Kapchorwa districts.		

### Reasons for Variation in performance

<b>Total</b>	<b>110,691</b>
Wage Recurrent	0
Non Wage Recurrent	110,691
AIA	0
<b>Total For SubProgramme</b>	<b>269,787</b>
Wage Recurrent	0
Non Wage Recurrent	269,787
AIA	0

### Recurrent Programmes

Subprogram: 21 Rwebitaba ZARDI

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
<i>Outputs Provided</i>			
<b>Output: 01 Generation of agricultural technologies</b>			
Generation of 6 acres of early generation bean seed, 2 acres of early generation indigenous fields, raising 2,000,000 seedlings of orchard & 25 coffee mother gardens maintained	1). Commodities enhanced and popularised through production of foundation (pre-basic and basic) seed for potato, beans, catfish, pasture and vegetables and disseminating it to farmers and LSBs	<b>Item</b>	<b>Spent</b>
		211103 Allowances (Inc. Casuals, Temporary)	25,159
		221011 Printing, Stationery, Photocopying and Binding	590
		224001 Medical Supplies	13,180
		224006 Agricultural Supplies	45,784
		227001 Travel inland	6,174
		227004 Fuel, Lubricants and Oils	3,784
		228002 Maintenance - Vehicles	1,500
	2). Total of 12,130 plantlets of oranges, avocado, calliandra, passion fruits, guavas and Maesopsis were raised and being maintained in the nursery.		
	3) 900kgs of bean foundation seed were harvested		
4) 7 community mother gardens supported			
5) 7 tree nurseries maintained. 5) Information effectiveness of different Tea disease management practices generated .			
6). Instant ready to drink specialty tea prototype developed			
			<b>Total</b>
			<b>96,171</b>
			Wage Recurrent
			0
			Non Wage Recurrent
			96,171
			AIA
			0
<b>Output: 04 Agricultural research capacity strengthened</b>			

### Reasons for Variation in performance

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
2 office buildings, 1 conference facility, 4 staff houses, screen houses & 2 animal structures rehabilitated. Well maintained 6 vehicles & 3 motorcycles. Holding 2 in each; radio talk show, TV documentaries & exhibitions & 10 contracted staff facilitated	- Conducted routine maintenance of research facilities, equipment and machinery Renovating Institute breeding facility completed Quality pasture seed fild established Quality pasture seed produced & pasture samples analysed Quality seed fumigated & packed Quality seeds available on market	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221001 Advertising and Public Relations 221002 Workshops and Seminars 221009 Welfare and Entertainment 221011 Printing, Stationery, Photocopying and Binding 222001 Telecommunications 223004 Guard and Security services 223005 Electricity 223006 Water 224004 Cleaning and Sanitation 224005 Uniforms, Beddings and Protective Gear 226001 Insurances 227001 Travel inland 227004 Fuel, Lubricants and Oils 228001 Maintenance - Civil 228002 Maintenance - Vehicles 228003 Maintenance – Machinery, Equipment & Furniture 273102 Incapacity, death benefits and funeral expenses	<b>Spent</b> 6,202 736 1,429 2,910 1,057 1,482 4,446 2,964 1,976 5,149 3,952 524 2,502 2,949 3,952 4,045 1,981 1,968

### Reasons for Variation in performance

<b>Total</b>	<b>50,224</b>
Wage Recurrent	0
Non Wage Recurrent	50,224
AIA	0
<b>Total For SubProgramme</b>	<b>146,395</b>
Wage Recurrent	0
Non Wage Recurrent	146,395
AIA	0

### Recurrent Programmes

#### Subprogram: 26 NARO Internal Audit

#### Outputs Provided

#### Output: 03 Internal Audit



# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
Develop generate; 1 tool for reporting risk trends	1) 5 Internal Audit staff's capacity developed	<b>Item</b> 221002 Workshops and Seminars	<b>Spent</b> 22,650
12 CGS projects Audit performance reports	2) Two reports on analysis of Mid and End of year balances and financial statements for the period ended 30th June 2021	221003 Staff Training 227001 Travel inland	5,600 77,460
2 Procurement compliance Audit reports	3) Three reports on Internal Audit value added services to management and the organization as a whole produced.		
1 value for money audit report	4) Two report on special circumstances produced		
Governance & Environmental audits reports	5) Four reports on Governance, risk and control produced.		
4 Risk Registers for PARI's	6) Four risk management report produced.		
2 audit rep	7) A Procurement Audit report produced.		
	8) A report on Assets, fleet and utilities management report Risk management policy and procedural manual discussed Report on High and medium risks produced.		
	9) Risk register updated.		

### Reasons for Variation in performance

<b>Total</b>	<b>105,710</b>
Wage Recurrent	0
Non Wage Recurrent	105,710
AIA	0
<b>Total For SubProgramme</b>	<b>105,710</b>
Wage Recurrent	0
Non Wage Recurrent	105,710
AIA	0

### Recurrent Programmes

Subprogram: 27 National Coffee Research Institute

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
------------------------	---	--	---------------

### Outputs Provided

#### Output: 01 Generation of agricultural technologies

For CWD, occurrence and distribution determined in 5 coffee growing regions, 2 protein and DNA-based protocols developed for diagnosis, 2 coffee host defense mechanisms unravel approaches. 2 resistance specific bio-markers	1) Additional data input for designing drone surveillance system for CWD incidence and distribution from Kakumiro, Kibaale and Kagadi districts	Item	Spent
		211103 Allowances (Inc. Casuals, Temporary)	4,562
		221001 Advertising and Public Relations	1,464
		221011 Printing, Stationery, Photocopying and Binding	157
		224006 Agricultural Supplies	13,260
		225001 Consultancy Services- Short term	7,859
		227001 Travel inland	21,121
		227004 Fuel, Lubricants and Oils	5,799
	2) An effective APP for relaying CWD information from the field to the central database available.		
	(3) Distribution map and prevalence in Masaka, Butambala, Gomba, Kasanda, Luwero and Kayunga districts		
	(4) No correlation found between CWD prevalence and soil physiochemical properties		
	(5) Protocols for collecting data from northern Uganda developed		

### Reasons for Variation in performance

<b>Total</b>	<b>54,223</b>
Wage Recurrent	0
Non Wage Recurrent	54,223
AIA	0

#### Output: 02 Research extension interface promoted and strengthened

Strengthen the institute with 5 computer accessories and utilized in training farmers and extension agents.	(1) Strengthened NACORI ICT capacity for training farmers and extension staff	Item	Spent
	(2) 20,000 seedlings for candidate Arabica coffee varieties initiated, Mother garden for Arabica coffee established at Bugusege substation.	221008 Computer supplies and Information Technology (IT)	4,723

### Reasons for Variation in performance

<b>Total</b>	<b>4,723</b>
Wage Recurrent	0
Non Wage Recurrent	4,723
AIA	0

#### Output: 04 Agricultural research capacity strengthened

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
Institutional research capacity strengthened through 4 (four) Advisory committee meetings, and 4 routine maintenance,3 research papers published	1) NACORI Human resource contract staff remunerated, facilitated and welfare enhanced. (2) NACORI physical resources managed and maintained. These include motor vehicle fleet , offices, office buildings and utilities (3) NACORI financial resources managed and maintained. (4) NACORI research agenda strengthened. by facilitating NACORI AD, NACORI Director and staff and officers	<b>Item</b>	<b>Spent</b>
		211103 Allowances (Inc. Casuals, Temporary)	15,161
		221001 Advertising and Public Relations	2,469
		221006 Commissions and related charges	7,200
		221009 Welfare and Entertainment	4,137
		221011 Printing, Stationery, Photocopying and Binding	2,115
		222001 Telecommunications	4,061
		222002 Postage and Courier	500
		223004 Guard and Security services	18,848
		223005 Electricity	11,904
		224004 Cleaning and Sanitation	7,923
		226001 Insurances	1,000
		228001 Maintenance - Civil	7,904
		228002 Maintenance - Vehicles	9,866
		228003 Maintenance – Machinery, Equipment & Furniture	6,942
273102 Incapacity,death benefits and funeral expenses	3,948		

### Reasons for Variation in performance

<b>Total</b>	<b>103,978</b>
Wage Recurrent	0
Non Wage Recurrent	103,978
AIA	0
<b>Total For SubProgramme</b>	<b>162,924</b>
Wage Recurrent	0
Non Wage Recurrent	162,924
AIA	0

### Development Projects

#### Project: 0382 Support for NARO

#### Outputs Provided

#### Output: 01 Generation of agricultural technologies

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
Six (06) candidate vaccines validated/developed and evaluated (anti-tick, multi strain FMD and 3 African Swine Fever Genotype X vaccine)	1. 22 new varieties/ prototypes submitted to Variety Release Committee for release	<b>Item</b>	<b>Spent</b>
37 varieties submitted to VRC & 53 Research innovations	2. 128 production technologies generated.	211103 Allowances (Inc. Casuals, Temporary)	1,066,385
64 research studies conducted.	3 . 38 research studies under competitive grants scheme (CGS)	221001 Advertising and Public Relations	32,770
110 scientific publications	4. 30 scientific publications	221002 Workshops and Seminars	573,269
	5 A technical preliminary vaccine evaluation report written and submitted to MAAIF	221003 Staff Training	84,430
	6. Run Most SPBE tests for serotypes O,A Sat1 and Sat2 for the vaccine experiments.	221008 Computer supplies and Information Technology (IT)	70,000
	7. Work still on going on development of candidate vaccines for (anti-tick, multi strain FMD and 3 African Swine Fever	221011 Printing, Stationery, Photocopying and Binding	54,805
		222003 Information and communications technology (ICT)	42,000
		223004 Guard and Security services	1,200
		223005 Electricity	82,960
		224001 Medical Supplies	856,616
		224006 Agricultural Supplies	2,782,504
		225001 Consultancy Services- Short term	16,913
		227001 Travel inland	888,426
		227004 Fuel, Lubricants and Oils	133,004
		228001 Maintenance - Civil	70,000
		228002 Maintenance - Vehicles	12,000
		228003 Maintenance – Machinery, Equipment & Furniture	35,000
		<b>Total</b>	<b>6,802,281</b>
		GoU Development	6,802,281
		External Financing	0
		AIA	0

### Reasons for Variation in performance

**Output: 02 Research extension interface promoted and strengthened**

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

		Item	Spent
131 technologies delivered to uptake pathways (fish kiln,bio fortified and high yielding varieties) for improved production and productivity of key commodities of economic importance. 68 platforms (incubation,IP AND technology dissemination and uptake)	1. 78 technological innovation platforms supported	211103 Allowances (Inc. Casuals, Temporary)	151,982
	2. 131 technological innovations delivered to uptake pathways which include:	221001 Advertising and Public Relations	462,505
	NAROSEC 1. NARO technology compendium for generated technologies for the period 2018-2020 developed.	221002 Workshops and Seminars	908,920
	2.Disseminated NARO technologies appropriate to 3 communities each in Rwenzori,Mubende and Bunyoro 3. Developed the NARO VIN system 4. One MOU between NARO and CEDO for development of precooked beans product signed 5. 35 stakeholders from USTA representing seed companies engaged. Draft Compilation of NAROWide newsletter 2020/2021is ready and awaiting approval 6. 135 publications digitized 7. 60 publications allocated class numbers and catalogue entries 8. 90 journal articles uploaded onto the e-repository at NARO Info Hub. Stakeholder consultation conducted and First draft of the DIRCKM policy framework developed and validated 9. A limited fraction of content uploaded on the online information hub 10. NARO feedback system developed awaiting TPM and User committee endorsement	221003 Staff Training	38,171
	Abi 11) One farmer group identified and will be trained in producing, packaging and marketing sorghum QDS in the west Nile region BugiZARDI 12) One Demand articulation report detailing programme activities with stakeholders and research needs produced Bulindi 13) Trained 25 visiting fish farmers, supported 3 fish farmers in harvesting tilapia. (14) 65 technologies delivered to uptake pathways (fish kiln,bio fortified and high yielding varieties) for improved production and productivity of key commodities of economic importance. (15) 25 platforms (incubation,IP and technology dissemination and uptake). (16) Engaged Feed the Future USAID project NARO chapter and Vision group on farm clinics, (4) On IP management (a) - Scouting conducted in 4 PARIs 6 technologies identified and disclosed, two undergoing drafting that is; (b) Engagements organised at PARIs (c) 3 IPMC meeting held and 3 recommendations on commercialization	221007 Books, Periodicals & Newspapers	10,750
		221008 Computer supplies and Information Technology (IT)	94,290
		221011 Printing, Stationery, Photocopying and Binding	82,842
		222001 Telecommunications	7,339
		222003 Information and communications technology (ICT)	465,000
		224001 Medical Supplies	191,200
		224006 Agricultural Supplies	883,720
		225001 Consultancy Services- Short term	8,000
		226001 Insurances	2,796
		226002 Licenses	29,000
		227001 Travel inland	523,239
		227004 Fuel, Lubricants and Oils	45,571
		228001 Maintenance - Civil	172,400
		228002 Maintenance - Vehicles	30,674
		228003 Maintenance – Machinery, Equipment & Furniture	14,525

# Vote:142

 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
------------------------	---	--	------------------

*Reasons for Variation in performance*

<b>Total</b>	<b>4,122,924</b>
GoU Development	4,122,924
External Financing	0
AIA	0

**Output: 04 Agricultural research capacity strengthened**

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

	Item	Spent
Staff capacity for 49 staff strengthened in short and long term training (PhD, master and short term training for refresher. Sixteen (16) research facilities maintained/repared and equipped with agriculture supplies and consumables) at the 16 institutes	A) Human resource capacity strengthened as follows:	
	a) Salaries and welfare for staff payed for 901	211103 Allowances (Inc. Casuals, Temporary) 245,543
	b) Staff welfare benefit paid.	221001 Advertising and Public Relations 7,150
	b) Short term skills improvement programmes conducted for 16 PARI and	221002 Workshops and Seminars 311,202
	c) NAROSEC, 5 staff supported to undertake MSc and PhD study programme.	221003 Staff Training 699,364
	d) Annual subscription paid for 30 staff who belong to professional bodies. e) 30 Staff Recruited and appointed in accordance with staff establishment.	221004 Recruitment Expenses 55,000
		221008 Computer supplies and Information Technology (IT) 58,199
		221009 Welfare and Entertainment 30,750
		221011 Printing, Stationery, Photocopying and Binding 70,680
	B) Procurement and supplies were acquired for the smooth and effective agricultural research service delivery as follows: 1) Agricultural Supplies. Running Framework Contracts on-going. Contracts awarded as and when need arises. The following contract were signed, supplies delivered, Payment effected and Contract closed. a) Supply of Uniforms, Beddings and Protective Gear	221012 Small Office Equipment 16,100
	b) Printing, Stationery and Binding c) Printing of NARO Annual Report. d) Printing of UJAS Booklets Printing of Compedium Booklets. e) Supply of Assorted Stationery f) Printing of Assorted. Information Material f) Supply of Assorted Toners Supply of Tonner for Heavy Duty Photocopiers g) Printing of NARO Customised Letter Heads h) Supply of additional copies of NARO Annual work plans i) Cleaning and Sanitation . j) Insurance of Motor Vehicles. k) Agricultural Supplies (Procurements handled at Institutes) l) Motor Vehicle Repairs/Maintenance m) Medical and Veterinary Supplies.	221016 IFMS Recurrent costs 135,000
	B) Supply of Ankole Animals	221017 Subscriptions 49,800
		222002 Postage and Courier 200
		222003 Information and communications technology (ICT) 10,600
		223002 Rates 232,500
		223004 Guard and Security services 1,498
		223005 Electricity 43,500
		223006 Water 10,000
		224001 Medical Supplies 42,000
		224004 Cleaning and Sanitation 1,800
		224006 Agricultural Supplies 289,776
		225001 Consultancy Services- Short term 233,880
		226001 Insurances 950
		226002 Licenses 238,000
		227001 Travel inland 702,636
		227004 Fuel, Lubricants and Oils 255,118
		228001 Maintenance - Civil 363,993
		228002 Maintenance - Vehicles 161,075
		228003 Maintenance – Machinery, Equipment & Furniture 300,000
		228004 Maintenance – Other 24,500
	15) NARO Grants Office Establishment. Contracts Signed, Assignment still ongoing	
	C) NARO visibility enhanced with the following:	
	(a) Supply of Promotional Items for Stakeholders (b) Development of NARO Wide Website (c) Provision of NARO Wide Media Services-Phase 1 (d) Provision of Photography services (e) Promotion of NARO online promotional and visibility	

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
------------------------	---	--	------------------

### Reasons for Variation in performance

<b>Total</b>	<b>4,590,813</b>
GoU Development	4,590,813
External Financing	0
AIA	0

### Outputs Funded

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

	Item	Spent
NARO's subscription to four (04) international organisation maintained for improved image and future resources mobilization for research.	Bioversity International 3rd cash contribution ( Novel Approaches improvement of Banana Production in East Africa Biotechnological Methodologies Phase IV	262201 Contributions to International Organisations (Capital)
		264101 Contributions to Autonomous Institutions
		1,192,500
		5,000

### Reasons for Variation in performance

NARO's subscription to ASARECA, ARICA-RICE,.Bioversity International (3rd cash contribution)

<b>Total</b>	<b>1,197,500</b>
GoU Development	1,197,500
External Financing	0
AIA	0

### Capital Purchases

#### Output: 72 Government Buildings and Administrative Infrastructure



# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
Eight (8) Gender and equity responsive agricultural research infrastructure(Multi purpose laboratories and a plant and Namalere Agri engineering facility and Aflasafe plant)	Contracts signed. Inception Report submitted. Contract under Implementation. for t consultancy services for design & preparation of BOQs for	<b>Item</b>	<b>Spent</b>
Remodel 4 cash offices, 4 staff house and 4 engineering feasibility studies and e	1) construction of an administration Block and a value addition facility at NaCORI,	281501 Environment Impact Assessment for Capital Works	15,000
	2) construction of a NARO Technology & Innovation Exhibition Centre at NARO Secretariat	281502 Feasibility Studies for Capital Works	15,000
	3) supervision of civil works-aflasafe and vaccine Facility.	281503 Engineering and Design Studies & Plans for capital works	241,647
	4) Completion of the Food-Bioscience laboratory at NARL, Construction of an Agricultural 5) Engineering & research facility at Namalere and	281504 Monitoring, Supervision & Appraisal of Capital work	611,750
	6) Construction of a Pharmacological research & production facility at NaFORRI.	312101 Non-Residential Buildings	13,249,831
	7) Construction of staff houses at Kigumba - civil works completed and Site handed over.	312102 Residential Buildings	433,000
	8) Construction of a (Milking Parlor Platform) - Contract still running until 30th March 2021. 9) Construction of Seed Processing Structure - Civil works completed. Payment effected and contract closed.	312104 Other Structures	3,960,018
	10) Assorted Multipurpose Office Blocks at Maruzi. Contract Signed. Works Commenced.		
	11) Additional Civil Works at Rwebitaba ZARDI-Phase 2. Civil works completed. Payment effected and contract closed.		
	12) External Civil Works at Rwebitaba ZARDI. Contract Signed. Site handed over. Advance Payment Guarantee submitted for payment..		
	13) Construction of an Aflasafe Facility at NaLIRRI-Nakyesasa. Contract signed. Site handed over. Advance paid and Civil works in progress.		
	14) Construction of a Multipurpose Vaccine Facility in NaLIRRI-Nakyesasa. Contract signed. Site handed over. Advance paid and civil works in progress.		
	15) Construction of a fish floating feed structure - Procurement awaits installation of equipment.		

### Reasons for Variation in performance

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
		<b>Total</b>	<b>18,526,246</b>
		GoU Development	18,526,246
		External Financing	0
		AIA	0

### Output: 76 Purchase of Office and ICT Equipment, including Software

	A) Supplies delivered, payment effected and contract closed.	Item	Spent
One software acquired, and ten offices retooled with computers.	1) Supply of Kaspersky End Users Antivirus	312213 ICT Equipment	447,360
Two research institutes connected to the area wide networks.	2) Board Portal Software, Audio Visual Equipment		
	3). Assorted IT Equipment		
	4). Preventive and Remedial Maintenance of Assorted ICT Equipment i.e Maintenance of Kyocera Photocopiers, Supply of Kaspersky End Users Antivirus		
	5) Provision of Licenses for an Intranet based contract management portal and data integration and back up solution,		
	6) Supply and Installation of Software for a dedicated cloud server.		
	7) Network Switch and Router.		
	8) Installation of Electrical Works		

### Reasons for Variation in performance

<b>Total</b>	<b>447,360</b>
GoU Development	447,360
External Financing	0
AIA	0

### Output: 77 Purchase of Specialised Machinery & Equipment

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
Three (3) batches of assorted laboratory equipment acquired to support research (Livestock research embryology, FMD culture equipment, anti-tick vaccine lab equipment) to enable vaccine research and Production.	<p>A) Supplies delivered, payments effected and contracts closed.</p> <p>1) Supply and Installation of fish encapsulation Machine.</p> <p>2) Supply of specialized in-vitro embryology equipment</p> <p>3) Supply of tractors and other specialized with assorted implements.</p> <p>4) Supply and installation of electricity and lightening conductors in Kalyengyere.</p> <p>B) Contract signed and awaiting delivery</p> <p>1) Supply of Specialized Machinery Vaccine Equipment.</p> <p>2) Supply and Installation of Floating Fish Feed Equipment.</p> <p>3) Specialised Laboratory &amp; Vaccine Equipment . Contract Signed. Advance Payment effected and balance of Ugx 2,868,033,088 opened thru letter of credit. Some items delivered and balance to be effected in December 2021.</p>	<p><b>Item</b></p> <p>312202 Machinery and Equipment</p> <p>312214 Laboratory Equipments</p>	<p><b>Spent</b></p> <p>1,858,896</p> <p>4,965,854</p>

### Reasons for Variation in performance

<b>Total</b>	<b>6,824,750</b>
GoU Development	6,824,750
External Financing	0
AIA	0

### Output: 78 Purchase of Office and Residential Furniture and Fittings

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Item	Spent
Three research facilities furnished (NaCORI multipurpose laboratory, Nakyesasa livestock research facility and vaccinology facility at Nakyesasa)	1) -Supply and Installation of customized book shelves.	312203 Furniture & Fixtures	18,284
Four residential houses furnished	2) Supply of Furniture-Mini Kitchen in DOF and DGs office.		
	3) Tendering process concluded. Contract awarded to M/S Nina Interiors (U) Ltd at a Contract amount of Ugx 175,269,988 but not signed due to insufficient funds.		

### Reasons for Variation in performance

<b>Total</b>	<b>18,284</b>
GoU Development	18,284
External Financing	0
AIA	0
<b>Total For SubProgramme</b>	<b>42,530,159</b>
GoU Development	42,530,159

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
		External Financing	0
		AIA	0

### Development Projects

#### Project: 1560 Relocation and Operationalisation of the National Livestock Resources Research Institute (NALIRRI)

##### Outputs Provided

##### Output: 01 Generation of agricultural technologies

		Item	Spent
1900 MT of silage and hay produced for dry season feeding	1) 5 tons of chloris seed harvested;	211103 Allowances (Inc. Casuals, Temporary)	168,000
320 MT of grain soya, maize and sunflower produced efficient livestock feed	2) 38 elite calves produced to constitute the elite research and embryo production herd at NaLIRRI	224006 Agricultural Supplies	100,000
3MT of forage seed produced	3) Livestock feed and feed ingredients produced. 1) 50 and 50 tons of soya and maize grain respectively produced 2) 800 tons of maize silage produced 3) 150 tons of hay produced	227001 Travel inland	12,000
		227004 Fuel, Lubricants and Oils	30,000
		228002 Maintenance - Vehicles	40,000
		228003 Maintenance – Machinery, Equipment & Furniture	40,000
	4) Livestock farming information materials produced and disseminated. a) Two technology exhibitions conducted.		
	5) One livestock research newsletters, 1 brochures/leaflets developed and disseminated Livestock research agenda strengthened with two research planning and knowledge sharing workshops.		

### Reasons for Variation in performance

<b>Total</b>	<b>390,000</b>
GoU Development	390,000
External Financing	0
AIA	0

### Capital Purchases

##### Output: 72 Government Buildings and Administrative Infrastructure

		Item	Spent
Capacity for livestock research strengthened through establishment of six research management structures (administration/office block, hay barn, grain store, staff residential block, Water and electricity supply, infrastructure master plan and 1 kilometer	1) External works for administration/ office block, hay barn, grain store, residential facilities and livestock structures undertaken	312101 Non-Residential Buildings	800,000
	2) Infrastructural development masterplan developed like road networks, fence etc		
	3) 1 kilometers fenced off using treated poles and barbed wire		

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Cumulative Outputs and Expenditure by End of Quarter

Annual Planned Outputs	Cumulative Outputs Achieved by End of Quarter	Cumulative Expenditures made by the End of the Quarter to Deliver Cumulative Outputs	UShs Thousand
------------------------	---	--	------------------

*Reasons for Variation in performance*

<b>Total</b>	<b>800,000</b>
GoU Development	800,000
External Financing	0
AIA	0
<b>Total For SubProgramme</b>	<b>1,190,000</b>
GoU Development	1,190,000
External Financing	0
AIA	0
<b>GRAND TOTAL</b>	<b>99,695,603</b>
Wage Recurrent	34,233,229
Non Wage Recurrent	21,742,215
GoU Development	43,720,159
External Financing	0
AIA	0

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
<b>Program: 51 Agricultural Research</b>			
<i>Recurrent Programmes</i>			
<b>Subprogram: 01 Headquarters</b>			
<i>Outputs Provided</i>			
<b>Output: 01 Generation of agricultural technologies</b>			
1) Finalize the revised NARO work plan and budget 2021/22	(1) NARO Annual work plan and budget 2021/22 finalized. 2) NARO Semi-annual status report on Agricultural research in Uganda developed.	<b>Item</b> 221002 Workshops and Seminars	<b>Spent</b> 31,687
2) Finalize the NARO resource mobilization policy	3 records management policy instruments developed .	227001 Travel inland	5,156
3) Finalize the NARO records management policy instruments			
<b>Reasons for Variation in performance</b>			
		<b>Total</b>	<b>36,843</b>
		Wage Recurrent	0
		Non Wage Recurrent	36,843
		<i>AIA</i>	0

**Output: 02 Research extension interface promoted and strengthened**

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

		Item	Spent
1) .Seek approval , finalize and popularize the partnership policy. 2. Monitor performance of MSIPs. 3. Track technologies delivered to uptake pathways	1. Presented for approval the partnership policy and DIRCKM policy framework to management and NARO governing council.	221001 Advertising and Public Relations	68,202
	2. Developed the following: draft partnership policy guidelines; a tool and generated draft information on technologies taken to different uptake pathways.	221002 Workshops and Seminars	758
2) Conduct a meeting to finalize the SOPs, print them and popularize them. 2. Coordinate Farm Clinics and other showcasing events. 3 3) Popularize the technology compendium	4. Finalized report on MSIPs supported by NARO.	221008 Computer supplies and Information Technology (IT)	3,968
4) Feedback to communities regarding availability of appropriate technologies from NARO.	5. Printed the following: 1000 copies of the commercialization policy. 1000 copies of commercialization guidelines.	227001 Travel inland	3,901
5) complete the renovation works for the Incubation hub building in MuZARDI	6. Conducted industrial engagements with Uganda Breeders Association,Uganda Breweries Limited, Nile Breweries Limited,Seed companies for licensing; (Knowledge City)		
6) Draft relevant MOUs and licensing agreements with Private sector for technology commercialization	7. Up-dating the NARO active variety list for commercialization		
7) Finalise drafting and filing of three IPR application (2 patent applications and 1 utility model)	8. A web-based Records Management system being developed.		
8) Two IPMC meeting to recommend seed companies for license signing and reviewing other commercialisation and IP related MOUs and agreements for decisions and recommendations.	9. One Patent application (use of subolesin for tick control) revised following examiners' comments, One patent application filed ( Use of LFA in detection and sdiagnosis of ASF) and one utility model (Process of milk culturing) application drfated and ready for filing		
9) Engage staff and selected stakeholders in IP awareness on IPM policy frameworks.	10. IPMC members and selected staff trained on licece negotaition and Intellectual Property valuation.		
10) NAROWide newsletter compiled and dessiminated	11. Application for International Standard Book Numbers (ISBN) for available knowledge products submitted to National Book Library. 19. Thirty scientific publications uploaded on the information hub		
11) Collect missing content from insitutes.	12. NARO Annual Report edition is ready for print .		
12) Digitization of 120 publications	13. NARO wide Newsletter Developed. Draft is ready and awaiting approval		
13) Allocation of 60 publications with class numbers and catalogue entries	14. Distributed and popularized the NARO file plan to selected institutes including BugiZARDI, NaSARRI, Ngetta ZARDI and BuZARDI		
14)100 journal articles uploaded onto the e-repository at NARO Information Hub "	15. designed and developed a records digitization system pending testing		
15) DIRCKM policy framework popularized among stakeholders	16. 121 publications digitized (65 reports, 21 brochures, 35 manuals and leaflets)		
16) Data of various KM stakeholders collected, analyzed and preliminary report produced	17. 86 publications allocated class numbers and catalog entries		
17) Data on NARO users KAP collected and recommendations for improvement availed.	18. 200 journal articles uploaded onto the e-repository at NARO Information Hub		
18) Knowledge products on selected interventions developed through hands on training			

# Vote:142

 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	US\$ Thousand
----------------------------	------------------------------------	---	------------------

*Reasons for Variation in performance*

<b>Total</b>	<b>76,828</b>
Wage Recurrent	0
Non Wage Recurrent	76,828
<i>AIA</i>	0

**Output: 04 Agricultural research capacity strengthened**



# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	US\$ Thousand
1) NARO Human resource of 910 persons remunerated, facilitated and welfare enhanced..	1) Kumi, boundaries were opened and the tiling process is underway; The title is expected anytime.	<b>Item</b>	<b>Spent</b>
		211102 Contract Staff Salaries	9,308,307
		211103 Allowances (Inc. Casuals, Temporary)	96,079
(2) NARO physical resources managed and maintained. These include motor vehicle fleet , office buildings and utilities	2) Land in Aduku cleared for proper identification and labour paid.	212101 Social Security Contributions	830,831
	3) 526 ha of land at Nabuin ZARDI surveyed and boundaries verified by district land committees to secure title and minimize encroachment.	213004 Gratuity Expenses	1,135,475
(3) Agricultural research agenda strengthened. by facilitating NARO council, NARO top management, committees, staff and officers of the organization.		221001 Advertising and Public Relations	6,375
	4) Support provided in attending 1 court case to defend RwebiZARDI land	221002 Workshops and Seminars	20,834
		221003 Staff Training	21,498
(4) Un-surveyedNARO land titled	5) Un surveyed land surveyed and consultancy survey report produced.	221008 Computer supplies and Information Technology (IT)	29,451
	6) Visits to Ministerial Zonal Offices (Jinja, Soroti, Lira, Gulu, and Mbarara) undertaken to followup NARO land tiling progress.	221009 Welfare and Entertainment	160
	7) NARO wide Performance Mid-term report developed.	221011 Printing, Stationery, Photocopying and Binding	11,999
		221012 Small Office Equipment	3,000
		221016 IFMS Recurrent costs	44,028
		222001 Telecommunications	42,168
		222002 Postage and Courier	4,149
		222003 Information and communications technology (ICT)	28,363
		223004 Guard and Security services	33,534
		223005 Electricity	22,397
		223006 Water	9,264
		224001 Medical Supplies	43,190
		224004 Cleaning and Sanitation	26,639
		224005 Uniforms, Beddings and Protective Gear	19,375
		224006 Agricultural Supplies	3,729
		225001 Consultancy Services- Short term	15,059
		226001 Insurances	99,315
		227001 Travel inland	34,817
		227004 Fuel, Lubricants and Oils	9,755
		228001 Maintenance - Civil	299,371
		228002 Maintenance - Vehicles	52,605
		228003 Maintenance – Machinery, Equipment & Furniture	36,306
		228004 Maintenance – Other	20,020
		273102 Incapacity,death benefits and funeral expenses	4,655

### Reasons for Variation in performance

Ivukula survey activity were disrupted due hostile environment.

<b>Total</b>	<b>12,312,747</b>
Wage Recurrent	9,308,307

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
		Non Wage Recurrent	3,004,440
		AIA	0
		<b>Total For SubProgramme</b>	<b>12,426,419</b>
		Wage Recurrent	9,308,307
		Non Wage Recurrent	3,118,111
		AIA	0

### Recurrent Programmes

#### Subprogram: 07 National Crops Resources Research Institute

##### Outputs Provided

#### Output: 01 Generation of agricultural technologies

Item	Spent
Early generation seed fields (beans, maize, cassava, sweet potato) and citrus mother gardens (citrus and mangoes, ) maintained	
1) 25 acres of cassava (NAROCASS 1) and 10 acres of sweetpotato multiplied in Kiggumba	211103 Allowances (Inc. Casuals, Temporary) 4,153
2) 2.7 MT of breeder seed were produced under (9 acres) in two locations (Rwebitaba and NaCRRI).	
3) 0.96MT of breeder seed for NAROBAN 6 and NAROBAN 7 produced.	

### Reasons for Variation in performance

<b>Total</b>	<b>4,153</b>
Wage Recurrent	0
Non Wage Recurrent	4,153
AIA	0

#### Output: 04 Agricultural research capacity strengthened

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
1) NACRRI Human resource persons remunerated, facilitated and welfare enhanced..	(1) NACRRI research physical facilities managed and maintained (two staff house, one workshop). (2) NACRRI human resource managed and maintained. Hired labour, contract staff and casual laborers wages paid. (canteen, dormitories, estates and farm management).	<b>Item</b>	<b>Spent</b>
(2) NACRRI physical resources managed and maintained. These include motor vehicle fleet , office buildings and utilities		211103 Allowances (Inc. Casuals, Temporary)	2,064
(3) NACRRI Agricultural research agenda strengthened. by facilitating advisory committee		221001 Advertising and Public Relations	1,889
		221002 Workshops and Seminars	2,515
		221008 Computer supplies and Information Technology (IT)	1,430
		221009 Welfare and Entertainment	1,423
		221011 Printing, Stationery, Photocopying and Binding	1,365
		222001 Telecommunications	420
		223004 Guard and Security services	1,049
		223005 Electricity	3,148
		224004 Cleaning and Sanitation	1,005
		226001 Insurances	269
		227001 Travel inland	1,623
		227004 Fuel, Lubricants and Oils	3,990
		228002 Maintenance - Vehicles	2,867
		228003 Maintenance – Machinery, Equipment & Furniture	1,070
		<b>Total</b>	<b>26,127</b>
		Wage Recurrent	0
		Non Wage Recurrent	26,127
		<i>AIA</i>	0
<i>Arrears</i>		<b>Total For SubProgramme</b>	<b>30,280</b>
		Wage Recurrent	0
		Non Wage Recurrent	30,280
		<i>AIA</i>	0

### Recurrent Programmes

#### Subprogram: 08 National Fisheries Resources Research Institute

##### Outputs Provided

#### Output: 01 Generation of agricultural technologies

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
Continue the on going work to produce the following: 1) 1 Least-cost mycotoxin safe aqua feeds formulated. 2) 1 technology for increasing shelf life live feed 1 broad spectrum probiotic combination to manage hatchery bacterial diseases, 3) Fish feeds formulae based on local ingredients 1 biocontrol agent	- Final protocol for production, and guidelines for batch culture developed.  - 1000 kgs of fresh BSF produced for making experimental fish feed and for running experiment to evaluate potential of different materials to preserve BSF	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 224001 Medical Supplies 224006 Agricultural Supplies 227004 Fuel, Lubricants and Oils	<b>Spent</b> 1,039 336 1,970 907
<b>Reasons for Variation in performance</b>			
		<b>Total</b>	<b>4,251</b>
		Wage Recurrent	0
		Non Wage Recurrent	4,251
		AIA	0

### Output: 02 Research extension interface promoted and strengthened

200,000 fish seed (Tilapia, catfish mirror carp and Barbus)	369,534 quality sex reversed tilapia fry produced and availed to farmers.	<b>Item</b> 221001 Advertising and Public Relations 221008 Computer supplies and Information Technology (IT) 221011 Printing, Stationery, Photocopying and Binding 222001 Telecommunications 227001 Travel inland 227004 Fuel, Lubricants and Oils	<b>Spent</b> 630 840 742 230 1,091 785
<b>Reasons for Variation in performance</b>			
		<b>Total</b>	<b>4,318</b>
		Wage Recurrent	0
		Non Wage Recurrent	4,318
		AIA	0

### Output: 04 Agricultural research capacity strengthened

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	US\$ Thousand
4000 brood stocks of 4 farmer preferred fish species stocked	1) Repair completed of Broodstock holding ponds (29) and concrete tanks (48) for larval nursing and demos.	<b>Item</b>	<b>Spent</b>
		211103 Allowances (Inc. Casuals, Temporary)	5,527
2) 16 fish hatchery operators trained		221001 Advertising and Public Relations	1,385
6,000,000 sex reversed tilapia fry	2) 369,534 quality sex reversed tilapia fry produced and availed to farmers.	221008 Computer supplies and Information Technology (IT)	461
		221009 Welfare and Entertainment	3,748
		221011 Printing, Stationery, Photocopying and Binding	631
		222001 Telecommunications	630
		222003 Information and communications technology (ICT)	1,113
		223004 Guard and Security services	1,259
		223005 Electricity	5,037
		223006 Water	1,994
		224004 Cleaning and Sanitation	2,138
		226001 Insurances	772
		227001 Travel inland	1,507
		227004 Fuel, Lubricants and Oils	2,245
		228001 Maintenance - Civil	2,099
		228002 Maintenance - Vehicles	6,201
		228003 Maintenance – Machinery, Equipment & Furniture	6,259

### Reasons for Variation in performance

<b>Total</b>	<b>43,006</b>
Wage Recurrent	0
Non Wage Recurrent	43,006
AIA	0
<b>Total For SubProgramme</b>	<b>51,575</b>
Wage Recurrent	0
Non Wage Recurrent	51,575
AIA	0

### Recurrent Programmes

#### Subprogram: 09 National Forestry Resources Research Institute

##### Outputs Provided

##### Output: 01 Generation of agricultural technologies

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Item	Spent
1) Endangered medicinal and timber tree species conserved ,	1. 5 high values species with high medicinal value (Zanthoxylum, Prunus africana, Kigelia africana, Olea,spp and Carisa edulis) conserved in an arboretum at Kifu station .	221002 Workshops and Seminars	525
2) Seed stands of three citrus varieties established in Kifu Research Forest,10 ha of forest research trials managed,		224006 Agricultural Supplies	400
3) One protocol for Production of healthy Citrus fruit seedlings		227001 Travel inland	189

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
----------------------------	------------------------------------	---	------------------

### Reasons for Variation in performance

<b>Total</b>	<b>1,114</b>
Wage Recurrent	0
Non Wage Recurrent	1,114
AIA	0

### Output: 02 Research extension interface promoted and strengthened

Information on various forestry research technologies delivered to stakeholders along the forestry resources value chain enhanced

1. Engagements with 10 key stakeholders in the paper industry ongoing.

Item	Spent
221001 Advertising and Public Relations	1,335
221008 Computer supplies and Information Technology (IT)	1,680

### Reasons for Variation in performance

<b>Total</b>	<b>3,015</b>
Wage Recurrent	0
Non Wage Recurrent	3,015
AIA	0

### Output: 04 Agricultural research capacity strengthened

1) Institute research capacity strengthened through advisory committee guidance.

1) Two green houses and 1 screen house maintained renovated respectively

2) Institute research capacity strengthened human resources, physical resources and financial resources.

2) staff welfare of 60 staff improved through provision of office break tea, emergency first aid and counselling services; ii) 10,000 square meters of institute green space (compound) maintained by mowing.  
• Staff movement to and from the station and in the field enhanced by routine movement of staff van and field vehicles (650 litres of fuels & Oils);  
ii) 1 pick up vehicle and 1 computer repaired; iii) Institute offices, laboratories, green houses and conference hall supplied with reliable power to support research and administrative works; iv) Institute reporting enhanced by availing stationery (50 reams of photocopying papers, 10 counter books, 10 boxes of pens, 88 copies of newspapers).

Item	Spent
211103 Allowances (Inc. Casuals, Temporary)	2,554
221002 Workshops and Seminars	2,096
221009 Welfare and Entertainment	1,661
221011 Printing, Stationery, Photocopying and Binding	938
222002 Postage and Courier	63
222003 Information and communications technology (ICT)	371
223004 Guard and Security services	2,834
223005 Electricity	6,487
224004 Cleaning and Sanitation	3,562
224005 Uniforms, Beddings and Protective Gear	420
227001 Travel inland	1,159
227004 Fuel, Lubricants and Oils	3,133
228001 Maintenance - Civil	1,574
228002 Maintenance - Vehicles	4,551
228003 Maintenance – Machinery, Equipment & Furniture	1,823

### Reasons for Variation in performance

<b>Total</b>	<b>33,225</b>
Wage Recurrent	0

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	US\$ Thousand
		Non Wage Recurrent	33,225
		AIA	0
		<b>Total For SubProgramme</b>	<b>37,354</b>
		Wage Recurrent	0
		Non Wage Recurrent	37,354
		AIA	0

### Recurrent Programmes

#### Subprogram: 10 National Livestock Resources Research

##### Outputs Provided

##### Output: 01 Generation of agricultural technologies

	Item	Spent
Continue the development of vaccines for tick and FMD.	1. A technical preliminary vaccine evaluation report written and submitted to MAAIF	221006 Commissions and related charges 2,514
	2. Run Most SPBE tests for serotypes O,A Sat1 and Sat2 for the vaccine experiments	221017 Subscriptions 6,306
	3) Coordinating running of VNT results from UK	223004 Guard and Security services 14,273
		223005 Electricity 26,761
		224001 Medical Supplies 202
	4) Acquired cell culture plates and cell culture media to start the cell culture process	224004 Cleaning and Sanitation 19,716
	5) collected and archived more 15 viruses	224005 Uniforms, Beddings and Protective Gear 19,148
	5) Acquired a cDNA fmd specific kit and can start the virus characterisation stage.	224006 Agricultural Supplies 2,308
		228002 Maintenance - Vehicles 29,908
	6) Optimised, serviced and calibrated all high tech equipment in the IADL lab	228003 Maintenance – Machinery, Equipment & Furniture 25,816
	4) Whole genome sequences of Namayingo and Soroti viruses analysed for the development of 2 ASF vaccine candidates for evaluation for performance in laboratory trials.	
	5) Testing not done due to procurement delays and Packaging not done due to procurement delays.	

##### Reasons for Variation in performance

	<b>Total</b>	<b>146,953</b>
	Wage Recurrent	0
	Non Wage Recurrent	146,953
	AIA	0

##### Output: 04 Agricultural research capacity strengthened

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
1) Three livestock laboratories and one forage conservation facility maintained.	1) Three livestock laboratories and one forage conservation facility maintained.	<b>Item</b>	<b>Spent</b>
3. Four livestock production facilities maintained. 4. Six research handling facilities maintained	2) Two on-station field research facilities maintained	211103 Allowances (Inc. Casuals, Temporary)	15,182
	3) Four livestock production facilities maintained	221001 Advertising and Public Relations	630
	4) Six research handling facilities maintained	221002 Workshops and Seminars	1,342
		221008 Computer supplies and Information Technology (IT)	2,201
		221009 Welfare and Entertainment	4,744
		221011 Printing, Stationery, Photocopying and Binding	1,365
		223005 Electricity	1,889
		224004 Cleaning and Sanitation	2,767
		226001 Insurances	269
		227001 Travel inland	927
		227004 Fuel, Lubricants and Oils	2,205
		228002 Maintenance - Vehicles	3,692

### Reasons for Variation in performance

<b>Total</b>	<b>37,211</b>
Wage Recurrent	0
Non Wage Recurrent	37,211
AIA	0
<b>Total For SubProgramme</b>	<b>184,164</b>
Wage Recurrent	0
Non Wage Recurrent	184,164
AIA	0

### Recurrent Programmes

#### Subprogram: 11 National Semi arid Resources Research

##### Outputs Provided

##### Output: 01 Generation of agricultural technologies

Continue on going work 20 cotton strain lines evaluated on 3 stations [Lira, Arua and Kasese] for yield, fibre quality attributes, quality oil and protein content. ..	20 strain lines were planted for evaluation at NaSARRI, Kasese and Nebbi for yield, fibre quality attributes, quality oil and protein content. Data collection and harvesting was only at NaSARRI.	<b>Item</b>	<b>Spent</b>
		227001 Travel inland	11,334

### Reasons for Variation in performance

<b>Total</b>	<b>11,334</b>
Wage Recurrent	0
Non Wage Recurrent	11,334
AIA	0

#### Output: 04 Agricultural research capacity strengthened



# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
1) NaSARRI's Corporate Image promoted among stakeholders thru field days 2) NASAARI research agenda popularized and strengthened thru two dissemination workshop and five committee meeting facilitated	1) NaSARRI's Corporate Image promoted among stakeholders thru field days 2) NASAARI research agenda popularized and strengthened thru two dissemination workshop.	<b>Item</b>	<b>Spent</b>
		211103 Allowances (Inc. Casuals, Temporary)	3,078
		221001 Advertising and Public Relations	1,824
		221002 Workshops and Seminars	7,556
		221009 Welfare and Entertainment	3,796
		221011 Printing, Stationery, Photocopying and Binding	993
		222001 Telecommunications	145
		222003 Information and communications technology (ICT)	607
		223004 Guard and Security services	435
		223005 Electricity	2,404
		224004 Cleaning and Sanitation	1,316
		226001 Insurances	296
		227001 Travel inland	1,539
		227004 Fuel, Lubricants and Oils	1,709
		228002 Maintenance - Vehicles	3,275
		273102 Incapacity,death benefits and funeral expenses	1,969

### Reasons for Variation in performance

<b>Total</b>	<b>30,940</b>
Wage Recurrent	0
Non Wage Recurrent	30,940
AIA	0
<b>Total For SubProgramme</b>	<b>42,274</b>
Wage Recurrent	0
Non Wage Recurrent	42,274
AIA	0

### Recurrent Programmes

#### Subprogram: 12 National Laboratories Research

##### Outputs Provided

#### Output: 01 Generation of agricultural technologies

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
Conclude on-going studies	1. Two commercial instant maize powder and snack products; developed.	<b>Item</b>	<b>Spent</b>
1) Value added products of maize, beans, soybean for commercialization.		211103 Allowances (Inc. Casuals, Temporary)	9,016
2) Botanical and bio-control pest control system tested. Groundnut decorticator available.	2. One precooked puffed bean product.	222001 Telecommunications	1,049
3) Climate smart technologies utilized.		223005 Electricity	3,148
4) Banana genotypes Hybrid seed generated		223006 Water	1,784
		224006 Agricultural Supplies	6,114
		227001 Travel inland	17,445
		227004 Fuel, Lubricants and Oils	474
		228003 Maintenance – Machinery, Equipment & Furniture	630
		<b>Total</b>	<b>39,660</b>
		Wage Recurrent	0
		Non Wage Recurrent	39,660
		<i>AIA</i>	0

### Reasons for Variation in performance

**Output: 02 Research extension interface promoted and strengthened**

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
Strengthened capacity through training and technology promotional engagements promotions	1) . One high quality smoked fish processing business centres using NAROFIK-3 Kilns;	<b>Item</b>	<b>Spent</b>
		211103 Allowances (Inc. Casuals, Temporary)	10,145
		221002 Workshops and Seminars	13,237
	2) Fifty motorized maize shellers; 15 Hand cranked maize shellers; 45 tripple bags; 50 units of 2 wheel tractors; 9 animal drawn and CA planters; 24 ox-carts and 6 NAROFIK-3 fish kilns4 enterprises under incubation (Dan-Agro - tomato powder, Lexico - gluten free products, Jackfruit powder, fortified fish & beans powder)	221011 Printing, Stationery, Photocopying and Binding	735
		224006 Agricultural Supplies	10,774
		227001 Travel inland	12,459
	3) Three citrus model village groups estblished in Kumi, Ngora and Soroti;		
	4. Four maize stem borer IPM platforms in Kayunga, Mbale and Bulambuli		
	5. Five mechanization uptake platforms inAdjuman, Gulu and Kitigum districts and 3 maize shelling centres in eastern Uganda and 2 Integrated crop-livestock production system using ram pump (NARORAMP-2) in Kabarole district		
	6). Two (postharvest handling centres in Kyamutakasa and Kapeeka, Nakaseke district) and 199 Farmers trained on grain post harvest handling and storage technologies in Nakaseke district (Kyamutakasa - 40 farmers; Kapeeka - 45; Bulwadda - 46; Kapeeke - 48; Magoma - 20).		

### Reasons for Variation in performance

<b>Total</b>	<b>47,350</b>
Wage Recurrent	0
Non Wage Recurrent	47,350
AIA	0

Output: 04 Agricultural research capacity strengthened

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
1) Institutional research capacity strengthened through one stake holder guidance engagement and four routine maintenance of research facilities, equipment, vehicles and support.	- Office equipment, field machinery & laboratory equipment at the institute maintained. - Human resources facilitated and strengthened.	<b>Item</b>	<b>Spent</b>
		221002 Workshops and Seminars	14,142
		221003 Staff Training	2,938
		221008 Computer supplies and Information Technology (IT)	3,320
		221009 Welfare and Entertainment	3,276
		221011 Printing, Stationery, Photocopying and Binding	979
		221012 Small Office Equipment	189
		222001 Telecommunications	756
		222002 Postage and Courier	31
		223004 Guard and Security services	4,424
		223005 Electricity	5,667
		224004 Cleaning and Sanitation	3,888
		227001 Travel inland	1,970
		227004 Fuel, Lubricants and Oils	3,642
		228002 Maintenance - Vehicles	5,180
		228003 Maintenance – Machinery, Equipment & Furniture	191
		228004 Maintenance – Other	1,023

### Reasons for Variation in performance

<b>Total</b>	<b>51,616</b>
Wage Recurrent	0
Non Wage Recurrent	51,616
AIA	0
<b>Total For SubProgramme</b>	<b>138,626</b>
Wage Recurrent	0
Non Wage Recurrent	138,626
AIA	0

### Recurrent Programmes

#### Subprogram: 13 Abi ZARDI

##### Outputs Provided

#### Output: 01 Generation of agricultural technologies

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Item	Spent
1) One advisory committee, PARI directors' forum meetings and 2 planning reviews held.	1). One advisory committee, PARI directors' forum meetings 2) Planning reviews held to guide the Abi ZARDI research agenda. 3) Eight lines of indigenous pulses collected awaiting laboratory analysis	221006 Commissions and related charges	1,826
2) Two Cassava composites products developed		222001 Telecommunications	168
		224006 Agricultural Supplies	4,403
		227001 Travel inland	3,925
3) One nutrition platform for nutrient enhanced cassava products developed		228003 Maintenance – Machinery, Equipment & Furniture	4,303

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
----------------------------	------------------------------------	---	------------------

### Reasons for Variation in performance

	Total	14,624
Wage Recurrent		0
Non Wage Recurrent		14,624
AIA		0

### Output: 02 Research extension interface promoted and strengthened

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Item	Spent
1) Two cassava based products disseminated to technology uptake pathways in West Nile	One nutrition platform meeting held on locally available nutrient rich food products for school-going children	221001 Advertising and Public Relations	1,102
		221002 Workshops and Seminars	7,871
		221008 Computer supplies and Information Technology (IT)	1,049
		221011 Printing, Stationery, Photocopying and Binding	262

### Reasons for Variation in performance

	Total	10,285
Wage Recurrent		0
Non Wage Recurrent		10,285
AIA		0

### Output: 04 Agricultural research capacity strengthened

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Item	Spent
Well maintained institutional research asset.		211103 Allowances (Inc. Casuals, Temporary)	1,277
		221002 Workshops and Seminars	126
		221008 Computer supplies and Information Technology (IT)	923
		221009 Welfare and Entertainment	949
		222001 Telecommunications	168
		223004 Guard and Security services	1,259
		223005 Electricity	420
		223006 Water	84
		224004 Cleaning and Sanitation	922
		226001 Insurances	84
		227001 Travel inland	1,043
		227004 Fuel, Lubricants and Oils	661
		228001 Maintenance - Civil	210
		228002 Maintenance - Vehicles	2,503
		228003 Maintenance – Machinery, Equipment & Furniture	317
		273102 Incapacity, death benefits and funeral expenses	420

### Reasons for Variation in performance

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
		<b>Total</b>	<b>11,366</b>
		Wage Recurrent	0
		Non Wage Recurrent	11,366
		AIA	0
		<b>Total For SubProgramme</b>	<b>36,275</b>
		Wage Recurrent	0
		Non Wage Recurrent	36,275
		AIA	0

### Recurrent Programmes

#### Subprogram: 14 Bulindi ZARDI

##### Outputs Provided

#### Output: 01 Generation of agricultural technologies

one effective bio-fungicide identified Status of fruit fly species in the LACZ determined	1) Established that there is a 114% banana productivity improvement after increased by manure application to a 1:1 ratio with top soil.  2) Established that there is a 100% yield improvement (100-250 fruits per tree per season up from 10 fruits per tree per season) under all three top soil amendments of Top soil: Manure: Sand amendment of 3:1:1, 2:1:2, & 1:1:1	Item	Spent
		211103 Allowances (Inc. Casuals, Temporary)	462
		221002 Workshops and Seminars	945
		222001 Telecommunications	420
		223004 Guard and Security services	840
		223005 Electricity	840
		227001 Travel inland	212

##### Reasons for Variation in performance

	<b>Total</b>	<b>3,717</b>
	Wage Recurrent	0
	Non Wage Recurrent	3,717
	AIA	0

#### Output: 02 Research extension interface promoted and strengthened

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
1) Delivery and access to improved agricultural technologies and information to 700 farmers	1) 25 Farmers (10 men and 15 women) trained in financial management and business administration for community seed businesses	<b>Item</b> 221001 Advertising and Public Relations	<b>Spent</b> 882
2) Four dissemination workshops, TV and radio talk shows conducted	2) 5 crop and pasture (beans, soybean, maize, ground nuts and pastures) station demos planted		
	3) 54 Farmers (24 men and 29 women) received training and guided tour on improved agricultural technologies and information at the institute.		
	4) 71 farmers from kyangwali and host communities in kikuube were trained in farming as a business and group dynamics in collaboration with Action against hunger.		
	5) At least 3 stakeholder meetings attended and feedback disseminated to the respective recipients		
	6) 2 stakeholder meetings attended and feedback disseminated to the respective recipients.		
	7) NARONAP 11 and P99 livestock feed are highly recommended for more dissemination.		

### Reasons for Variation in performance

<b>Total</b>	<b>882</b>
Wage Recurrent	0
Non Wage Recurrent	882
<i>AIA</i>	0

### Output: 04 Agricultural research capacity strengthened

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
Strengthening the human resource, financial and institutional management capacity of BUZARDI in delivery of research outputs	Strengthening the human resource, financial and institutional management capacity of BUZARDI in delivery of research outputs	<b>Item</b>	<b>Spent</b>
		221002 Workshops and Seminars	1,886
		221009 Welfare and Entertainment	2,135
		221011 Printing, Stationery, Photocopying and Binding	171
		222001 Telecommunications	168
		222002 Postage and Courier	3
		223004 Guard and Security services	588
		223005 Electricity	2,687
		224004 Cleaning and Sanitation	738
		224005 Uniforms, Beddings and Protective Gear	924
		226001 Insurances	107
		227001 Travel inland	195
		227004 Fuel, Lubricants and Oils	308
		228002 Maintenance - Vehicles	2,457
		228003 Maintenance – Machinery, Equipment & Furniture	75
		228004 Maintenance – Other	39
		273102 Incapacity, death benefits and funeral expenses	84

### Reasons for Variation in performance

	<b>Total</b>	<b>12,564</b>
	Wage Recurrent	0
	Non Wage Recurrent	12,564
	<i>AIA</i>	0
<i>Arrears</i>		
	<b>Total For SubProgramme</b>	<b>17,163</b>
	Wage Recurrent	0
	Non Wage Recurrent	17,163
	<i>AIA</i>	0

### Recurrent Programmes

#### Subprogram: 15 Kachwekano ZARDI

#### Outputs Provided

#### Output: 01 Generation of agricultural technologies



# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
3 on-station ponds rehabilitated and maintained and fully functional.	1) Trials involving five NPK fertilizer levels, one potato variety(Rwangume) and two soil tillage practices (minimum and conventional ) were established in two sites; Rubanda (Kachwekano) and Kabale (Kariko) Districts.	<b>Item</b> 221011 Printing, Stationery, Photocopying and Binding	<b>Spent</b> 50
2) breeding bucks accessed Ten Soil fertility profiles developed 3 onstation orchards rehabilitated.		224001 Medical Supplies	141
3) Publication of survey findings on dairy production practices in SWHAEZ	2) Defoliation, pruning and bending of trees carried out in 2 orchards. Proved to increase flowering efficiency by 70%	227001 Travel inland	1,282
4) Atleast 24 disease free dairy cows with the best morphological and udder conformation, health identified for dairy research.		227004 Fuel, Lubricants and Oils	105

### Reasons for Variation in performance

<b>Total</b>	<b>1,579</b>
Wage Recurrent	0
Non Wage Recurrent	1,579
AIA	0

### Output: 02 Research extension interface promoted and strengthened

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Item	Spent
150 Farmers mobilised through 1 field days to increase uptake of NARO technologies for increases productivity. Productivity enhancing technologies promoted through 3 radio talk shows, 1 video documentaries and production of dissemination materials (Assorted).	1) 200 farmers reached with NARO technologies	221001 Advertising and Public Relations	699
	2) supplied to farmers. 120,000 minitubers generated and 10 tonnes of basic seed produced.	221011 Printing, Stationery, Photocopying and Binding	239
	3) 1000 apple seedlings raised	224001 Medical Supplies	231
	4 ) Three radio talk shows conducted involving promotion of potato technologies,	224006 Agricultural Supplies	108
	5) One manual on integrated soil fertility management developed,	227001 Travel inland	1,146
	6) Five brochures developed. On contour bench terracing, construction of check dams, contour retention trechnes, grass bands and rehabilitation of degraded terraces	227004 Fuel, Lubricants and Oils	67

### Reasons for Variation in performance

<b>Total</b>	<b>2,490</b>
Wage Recurrent	0
Non Wage Recurrent	2,490

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
		AIA	0
<b>Output: 04 Agricultural research capacity strengthened</b>			
Enhancing institutional research capacity through routine monitoring (1trips)safeguarding assets (Assorted) serving computers (1)and infrastructure vehicle(1) machinery (1) maintained,	Institutional research capacity Enhanced through one (1) consultative engagements, (2) routine research infrastructure, vehicles machinery and equipment maintained. (3) Nursery bed maintenance, orchard management (pruning, defoliation,bending and staking, spraying, ), supplied to farmers. 120,000 minitubers generated and 10 tonnes of basic seed produced. 1000 apple seedlings raised	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221002 Workshops and Seminars 221009 Welfare and Entertainment 221011 Printing, Stationery, Photocopying and Binding 222001 Telecommunications 222003 Information and communications technology (ICT) 223004 Guard and Security services 223005 Electricity 223006 Water 224004 Cleaning and Sanitation 226001 Insurances 227001 Travel inland 227004 Fuel, Lubricants and Oils 228001 Maintenance - Civil 228002 Maintenance - Vehicles 228003 Maintenance – Machinery, Equipment & Furniture	<b>Spent</b> 775 1,679 3,080 291 322 629 504 1,070 630 887 126 515 786 566 1,037 524
		<b>Total</b>	<b>13,421</b>
		Wage Recurrent	0
		Non Wage Recurrent	13,421
		AIA	0
		<b>Total For SubProgramme</b>	<b>17,489</b>
		Wage Recurrent	0
		Non Wage Recurrent	17,489
		AIA	0

### Reasons for Variation in performance

#### Recurrent Programmes

#### Subprogram: 16 Mukono ZARDI

#### Outputs Provided

#### Output: 01 Generation of agricultural technologies

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
Four (04) technologies generated	1) Established and managed a field peas demonstration plot showcasing performance of the crop under two spacings at 60x20 cm and 50x20 cm; demonstration on cabbage (Baraka Fi from East AfricaSeeds and Tacoma FI from House of seeds) and carrot varieties.	<b>Item</b>	<b>Spent</b>
		221011 Printing, Stationery, Photocopying and Binding	588
		222001 Telecommunications	210
		223004 Guard and Security services	1,049
		223005 Electricity	3,526
		223006 Water	252
	2) Maintained 0.5 acres of coffee demonstration plots at Ntawo and a 2 acre plot at Kamenyamiggo; 0.75 acres of coffee mother garden at Ntawo and 0.75 acres at Kamenyamiggo, and 0.25 acres of cocoa at Ntawo.A -still ongoing.	224001 Medical Supplies	303
		227001 Travel inland	1,507
		227004 Fuel, Lubricants and Oils	1,360
		<b>Total</b>	<b>8,795</b>
		Wage Recurrent	0
		Non Wage Recurrent	8,795
		AIA	0

### Reasons for Variation in performance

#### Output: 04 Agricultural research capacity strengthened

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Item	Spent
2 Multi-stake holder innovation platform in Seed and seedling Production and Marketing established. One Multi-stake holder innovation platform in Seed One policy to guide decision making.	2 acres of pasture maintained for silage making; 1.5 acre of Napier grass and 0.5 acre of lablab. 4 acres have been ploughed waiting for planting pasture (2acres of Napier, 1 acreof Lab-Lab and 1acreof cloris gayana) and these will be mainly for seed multiplication. 10 farmers have been trained on establishment and usage of these different types of pastures. This on -station demonstration attracted 20 farmers and 10 students.	211103 Allowances (Inc. Casuals, Temporary)	1,703
		221001 Advertising and Public Relations	756
		221008 Computer supplies and Information Technology (IT)	1,730
		221009 Welfare and Entertainment	2,372
		222002 Postage and Courier	76
		224004 Cleaning and Sanitation	2,663
		226001 Insurances	118
		228001 Maintenance - Civil	2,177
		228002 Maintenance - Vehicles	2,275
		228003 Maintenance – Machinery, Equipment & Furniture	820
		228004 Maintenance – Other	315
		273102 Incapacity,death benefits and funeral expenses	252
		<b>Total</b>	<b>15,255</b>
		Wage Recurrent	0
		Non Wage Recurrent	15,255
		AIA	0

### Reasons for Variation in performance

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
		<b>Total For SubProgramme</b>	<b>24,050</b>
		Wage Recurrent	0
		Non Wage Recurrent	24,050
		AIA	0

### Recurrent Programmes

#### Subprogram: 17 Ngetta ZARDI

##### Outputs Provided

##### Output: 01 Generation of agricultural technologies

		Item	Spent
1) Soil seed bank estimation technique, integrated weed management technologies for maize developed	Surveillance for fruit flies in sub agroecological zones of northern Uganda was conducted in the districts of Lira (Barr subcounty), Amolatar ( Amanyi Subcounty), Kitgum (Matidi subcounty), Gulu (Bungatira subcounty), Omoro (Koro subcounty) and Aleptong (Amugu subcounty). Identification of trapped fruitfly species samples is ongoing.	211103 Allowances (Inc. Casuals, Temporary)	456
2) incidence maps (1 for citrus leaf and fruit spot and 1 for gummosis disease) updated	Established an onstation and onfarm trial in the districts of Lira (Barr subcounty), Amolatar ( Amanyi Subcounty), Kitgum (Matidi subcounty), Gulu (Bungatira subcounty), Omoro (Koro subcounty) and Aleptong (Amugu subcounty) to validate efficacy of 3 fruit fly trap baits (molasse, methyl eugenol, Cue lure) in trapping mango fruit flies. Data collection ongoing	221001 Advertising and Public Relations	71
3) integrated disease management options for citrus diseases validated.		221002 Workshops and Seminars	1,446
4) 3 acres of improved soya bean varieties (MAKSOY3N and Pigeon pea SEPI 1) maintained & harvested		221011 Printing, Stationery, Photocopying and Binding	39
4) 660kg of maize seed and 2 bags of fertilizer procured		223005 Electricity	201
5) Five acres of improved cassava varieties planted and 14 cres of cassava ratoons maintained		224001 Medical Supplies	155
6) Threee acres of citrus, 4 acres of mango mango, and 2 acres of coffee mother gardens and demos maintained		224006 Agricultural Supplies	289
4 acres of Boundry woodlot maintained		227001 Travel inland	2,650
		227004 Fuel, Lubricants and Oils	107

##### Reasons for Variation in performance

<b>Total</b>	<b>5,414</b>
Wage Recurrent	0
Non Wage Recurrent	5,414
AIA	0

##### Output: 02 Research extension interface promoted and strengthened

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
1) Capacity of 10 extension workers and 200 citrus farmers in citrus disease management enhanced.	Established and maintained 1/4 acre of each of cassava varieties (NASE 14, 19, NAROCAS1 and NAROCAS2) and half acre of each of improved varieties of Beans (NAROBEAN 1,2,3 , 4C and 5C, K35K35), Soyabean (MAKSOY 1N, 3N, 4N ,5N and 6N). Groundnuts (Serenut 8R, 9T, 11T 14R, NARONUT1), Sorghum (SESO 3, NAROSOG1-4) and Millet (NAROMIL 1,2,3 & 4) for onstation evaluation, demonstration and adaptation. 4 irrigation technologies were also demonstrated (Bucket, sprinkler, drip and bottle)	<b>Item</b>	<b>Spent</b>
2) Fishing farming technologies demonstrated		211103 Allowances (Inc. Casuals, Temporary)	287
		221002 Workshops and Seminars	189
		221011 Printing, Stationery, Photocopying and Binding	22
		224006 Agricultural Supplies	193
		227001 Travel inland	393
		227004 Fuel, Lubricants and Oils	150

### Reasons for Variation in performance

<b>Total</b>	<b>1,234</b>
Wage Recurrent	0
Non Wage Recurrent	1,234
<i>AIA</i>	0

### Output: 04 Agricultural research capacity strengthened

1) 10 farm roads, 21 acres of compound maintained and and 1 insitute infrastructure renovated.	1) Ngetta ZARDI facilitated to undertake zonal mandate. Conducted routine maintenance of vehicles, research facilities, equipment and machinery 2) 22 LSB groups strategically linked to QDS support services and networks	<b>Item</b>	<b>Spent</b>
		221011 Printing, Stationery, Photocopying and Binding	157
		223004 Guard and Security services	1,050
		223005 Electricity	218
		223006 Water	168
		224004 Cleaning and Sanitation	196
		227001 Travel inland	339
		227004 Fuel, Lubricants and Oils	185
		228002 Maintenance - Vehicles	1,602

### Reasons for Variation in performance

<b>Total</b>	<b>3,916</b>
Wage Recurrent	0
Non Wage Recurrent	3,916
<i>AIA</i>	0
<b>Total For SubProgramme</b>	<b>10,564</b>
Wage Recurrent	0
Non Wage Recurrent	10,564
<i>AIA</i>	0

### Recurrent Programmes

#### Subprogram: 18 Nabium ZARDI

#### Outputs Provided

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
<b>Output: 01 Generation of agricultural technologies</b>			
1) one effective weed seed bank estimation method for different soils in the zone identified	<ul style="list-style-type: none"> <li>• Established 2 technology Demonstrations ( construction of wash stops and ridges) in Moroto and Serere for farmer learning ; information, education and communication (IEC) materials on sorghum varieties, labour saving technologies and seed processing poster and exhibition banner printed. Managed the set demonstrations on ridges and wash stops in the two districts of Serere and Moroto, trained 50 farmers in Serere and Moroto on compost manure application for soil fertility improvement</li> </ul>	<b>Item</b>	<b>Spent</b>
2) one integrated practice of managing weeds in maize under conservation agriculture developed		211103 Allowances (Inc. Casuals, Temporary)	388
3) The incidence and severity of 3 key citrus diseases in 8 districts of northern Uganda determined and a map generated showing their distribution in northern Uganda		221011 Printing, Stationery, Photocopying and Binding	101
3) One report on efficacy of different IPDM options produced		224006 Agricultural Supplies	352
4) Preliminary report on growth performance of apiculture forage trees		227001 Travel inland	663
4) 2 dual purpose trees to serve as apiary forage and shade for coffee and cocoa in northern Uganda identified		227004 Fuel, Lubricants and Oils	294
5) One agronomic package for mulberry production identified			
6) 3 indigionuos fruit trees with economic and health attributes identified			
7) One publication in a peer reviewed journal			
9) one approach for stock replacement in livestock and poultry identified			
10) Two disease management approaches in livestock and poultry identified for promotion			
11) 'One validation trial established on station			

### Reasons for Variation in performance

<b>Total</b>	<b>1,798</b>
Wage Recurrent	0
Non Wage Recurrent	1,798
AIA	0

### Output: 04 Agricultural research capacity strengthened

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
1) One technology demonstration report produced.	1) 5 acres of land prepared (cleared, and ploughed)	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary)	<b>Spent</b> 894
2) Proven agricultural technologies demonstrated to stakeholders.	2) 30 farmers trained on-station in pasture establishment and management	221001 Advertising and Public Relations 221002 Workshops and Seminars	218 2,515
	3) A total of 85 heads of cattle maintained on-station: Zebu (32 cows, 04 bulls and 09 calves); Sahiwal (02 bulls; 21 crosses); Friesians (03 cows, 05 calves and 09 crosses).	221009 Welfare and Entertainment 221011 Printing, Stationery, Photocopying and Binding 222002 Postage and Courier	949 205 30
	4) 60 , farmers from Moroto, Kaabong Napak, Kotido and Abim distritcs respectively) trained cattle herd nutrition and health management.	223004 Guard and Security services 223005 Electricity 224004 Cleaning and Sanitation	225 193 58
	5) Experimental animals maintained on station (36 Mubende goats (28 females and 08 males). A total of 8 pigs (7 sows and 1 boar) maintained on station. 25 piglest produced and sold to farmers.	224005 Uniforms, Beddings and Protective Gear 226001 Insurances 227001 Travel inland 227004 Fuel, Lubricants and Oils 228001 Maintenance - Civil 228002 Maintenance - Vehicles 228003 Maintenance – Machinery, Equipment & Furniture 273102 Incapacity,death benefits and funeral expenses	201 59 418 620 672 1,092 596 252

### Reasons for Variation in performance

<b>Total</b>	<b>9,199</b>
Wage Recurrent	0
Non Wage Recurrent	9,199
AIA	0
<b>Total For SubProgramme</b>	<b>10,997</b>
Wage Recurrent	0
Non Wage Recurrent	10,997
AIA	0

### Recurrent Programmes

#### Subprogram: 19 Mbarara ZARDI

#### Outputs Provided

#### Output: 01 Generation of agricultural technologies

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
1) AI undertaken using high grade semen in 10 dairy cows	1) Data collection on agronomic performance of bean crop under six nitrogen fixing shrubs completed. Two best nitrogen fixing shrubs that improve bean productivity identified. Gliricidia sepium and Tephrosia vogelli gave the highest yields of 266 kg/acre and 227 kg/acre respectively. A draft set of guidelines for training farmers on use of nitrogen fixing shrubs to increase bean productivity in SWAEZ developed.	<b>Item</b>	<b>Spent</b>
2) Reproductive traits of served and other dairy cows on station assessed.	2) One prototype of a field test formalin test kit designed and available for validation and registration.	221011 Printing, Stationery, Photocopying and Binding	168
3) Cows, heifers and calves with superior traits selected and tracked as an Elite herd.	3) One strategy for enhancing adoption of quality seed (bean, cassava, maize and pasture seed varieties) developed to address the nutrition, and income challenges amongst farmers in the 16 districts of South Western Agro Ecological Zone.	222001 Telecommunications	210
	4) In farmed fish, 100% of growth performance evaluated and 50% of data on profitability. Growth performance found to be 0.3 and 0.4 g/day in ponds and about 0.5g/day in tanks. Profitability index based net present value and initial investment based on station trials showed that farming small catfish is more profitable than that of Nile tilapia per m3 of water used (ie PI was 1.2 and 1.1 for samll catfish and nile tilapia respectively. The project was cleaner ,affordable by women and youth groups who have limited rights to land and water resources.	223004 Guard and Security services	647
	5) A total of 420 seedlings (300 coffee and 120 fruit seedlings ) disseminated to stakeholders in the zone.	223005 Electricity	1,679
	6) 55 tonnes of green chop fed to dairy cattle,assorted feed supplements fed to animals ;600 kg of salt,400 kg of soy meal, 40 kg of pig and dairy macro mixes.	223006 Water	1,259
		227001 Travel inland	251
		227004 Fuel, Lubricants and Oils	181
		228002 Maintenance - Vehicles	168

### Reasons for Variation in performance

<b>Total</b>	<b>4,564</b>
Wage Recurrent	0
Non Wage Recurrent	4,564
AIA	0



# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	US\$ Thousand
<b>Output: 04 Agricultural research capacity strengthened</b>			
Agriculture research capacity strengthened, guided through one (1) advisory committee meeting, maintenance of research facilities, equipment and support.	technological innovations NARO technologies were delivered to uptake pathways. 1) 21 goat kids produced (13 male & 8 female), 3 goats availed (NTR) to the community for meat. 16 piglets (1 females +15 males) produced. 17 pigs (9 females and 8 male piglets disseminated 7 Calves produced (6 male & 1 female), 23 heads of cattle (2 cows and 20 weaner bulls) availed to farmers	<b>Item</b>	<b>Spent</b>
		211103 Allowances (Inc. Casuals, Temporary)	527
		221001 Advertising and Public Relations	58
		221008 Computer supplies and Information Technology (IT)	369
		221009 Welfare and Entertainment	1,423
		221011 Printing, Stationery, Photocopying and Binding	205
		223004 Guard and Security services	1,007
		224004 Cleaning and Sanitation	442
		226001 Insurances	107
		227001 Travel inland	348
		227004 Fuel, Lubricants and Oils	850
		228001 Maintenance - Civil	252
		228002 Maintenance - Vehicles	511
		228003 Maintenance – Machinery, Equipment & Furniture	163
		<b>Total</b>	<b>6,262</b>
		Wage Recurrent	0
		Non Wage Recurrent	6,262
		AIA	0
		<b>Total For SubProgramme</b>	<b>10,826</b>
		Wage Recurrent	0
		Non Wage Recurrent	10,826
		AIA	0

### Reasons for Variation in performance

### Recurrent Programmes

#### Subprogram: 20 Buginyaya ZARDI

#### Outputs Provided

#### Output: 01 Generation of agricultural technologies

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
1) Two ton of improved been cultivars produced and availed for uptake	1) Forty four goats (8 bucks and 36 does) maintained for breeding at Bulegeni station.	<b>Item</b>	<b>Spent</b>
2) 1000 bags of quality cassava planting materials availed to enhance food security and incomes	2) One effective management practice for Mirror carp table production based on sinking feeds in earthen ponds addressing; appropriate stocking densities, carrying capacity, feeding rates, growth rates ...etc) was developed.	211103 Allowances (Inc. Casuals, Temporary)	944
3) 100 bags of OFSP availed to vulnerable households to combat malnutrition for these vulnerable groups	3) 15 promising QPM hybrids at flowering stage under NPT2 in Kiboga, Nebbi, Bulambuli (Buginyanya station) and Bukwo districts. 0.5 acres of breeder seed field at grain forming stage.	221002 Workshops and Seminars	2,146
4) 0.5 tons produced and availed to commercial seed producers	4) better disease management	224001 Medical Supplies	1,198
5) Recommend the most effective management option for weevils and nematodes in bananas conducted		224006 Agricultural Supplies	3,656
6) Recommend the most responsive fertilizer combination for improved arabica coffee productivity to fast track attainment of national coffee targets further 0.1 yield increase attained through		227001 Travel inland	2,568
7) Management and maintenance of seed plots		227004 Fuel, Lubricants and Oils	926
8) 20 apple orchards rehabilitated to improve fruiting		228002 Maintenance - Vehicles	1,425
9) Submit two candidate lines to the variety release committee for release			
10) Most adapted genotypes exhibited in demonstration fields. Seed of adapted genotypes availed to farmers and agro-input dealers			
11) Recommend and disseminate the most suitable ISFM option in the zone			
12) Rice crop management system that reduces the effects of yield suppression of Nerica 1 variety recommended			
13) 1500 assorted tree seedlings availed to support initiatives of climate change adaptation			
14) 8 tons produced and availed to LSBs .			

### Reasons for Variation in performance

<b>Total</b>	<b>12,864</b>
Wage Recurrent	0
Non Wage Recurrent	12,864
<i>AIA</i>	0

**Output: 04 Agricultural research capacity strengthened**

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
250 bags of improved OFSP vines and 15MT of planting material for commercial potato varieties delivered to uptake pathways, Increased apple productivity through capacity of 200 farmers and TOTs trained in best management practices of apples.	1) 700 bags of potato vines of Naspot 8 and Narospot 1 availed to farmers in Mayuge & Kamuli. 1 acre of potato seed multiplication garden established at Ikulwe  2) 40% increased survival of suitable varieties for wide banana multiplication and production in Mt. Elgon  3) Alternate use of fungicides applied as cleanup and control during the season limits effects of fungal diseases in arabica coffee.  4) 6 tonnes of ripe cherry expected from 10 acres of productive field across Buginyanya and Bulegeni stations  5) 20 apple orchards maintained.  6) Eucalyptus woodlots maintained, melanii woodlot maintained  7) 9200 seedlings maintained on the tree nursery at Buginyanya station	<b>Item</b>	<b>Spent</b>
		211103 Allowances (Inc. Casuals, Temporary)	511
		221001 Advertising and Public Relations	84
		221009 Welfare and Entertainment	1,424
		221011 Printing, Stationery, Photocopying and Binding	205
		221012 Small Office Equipment	25
		222001 Telecommunications	168
		223004 Guard and Security services	1,343
		223005 Electricity	1,343
		223006 Water	378
		224004 Cleaning and Sanitation	272
		226001 Insurances	84
		227001 Travel inland	348
		227004 Fuel, Lubricants and Oils	601
		228001 Maintenance - Civil	672
		228002 Maintenance - Vehicles	1,274
		228003 Maintenance – Machinery, Equipment & Furniture	298
228004 Maintenance – Other	189		
273102 Incapacity, death benefits and funeral expenses	168		

### Reasons for Variation in performance

<b>Total</b>	<b>9,386</b>
Wage Recurrent	0
Non Wage Recurrent	9,386
AIA	0
<b>Total For SubProgramme</b>	<b>22,250</b>
Wage Recurrent	0
Non Wage Recurrent	22,250
AIA	0

### Recurrent Programmes

#### Subprogram: 21 Rwebitaba ZARDI

#### Outputs Provided

#### Output: 01 Generation of agricultural technologies

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
1) Generation of one acres of early generation bean seed.	Commodities enhanced and popularized through production of foundation (pre-basic and basic) seed for potato, beans, catfish, pasture and vegetables and disseminating it to farmers and LSBs	<b>Item</b>	<b>Spent</b>
2) Two acres of early generation indigenous fields,		211103 Allowances (Inc. Casuals, Temporary)	1,681
3) raising 2,000,000 seedlings of orchard & 25 coffee mother gardens maintained		221011 Printing, Stationery, Photocopying and Binding	50
		224001 Medical Supplies	626
		224006 Agricultural Supplies	3,226
		227001 Travel inland	659
		227004 Fuel, Lubricants and Oils	344
		<b>Total</b>	<b>6,586</b>
		Wage Recurrent	0
		Non Wage Recurrent	6,586
		<i>AIA</i>	0

### Reasons for Variation in performance

#### Output: 04 Agricultural research capacity strengthened

Management and maintenance of Institute physical resources.	- Conducted routine maintenance of research facilities, equipment and machinery Renovating Institute breeding facility completed Quality pasture seed field established Quality pasture seed produced & pasture samples analysed Quality seed fumigated & packed Quality seeds available on market	<b>Item</b>	<b>Spent</b>
		211103 Allowances (Inc. Casuals, Temporary)	511
		221001 Advertising and Public Relations	76
		221002 Workshops and Seminars	1,023
		221009 Welfare and Entertainment	1,517
		221011 Printing, Stationery, Photocopying and Binding	102
		222001 Telecommunications	94
		223004 Guard and Security services	283
		223005 Electricity	189
		223006 Water	126
		224004 Cleaning and Sanitation	372
		224005 Uniforms, Beddings and Protective Gear	252
		226001 Insurances	33
		227001 Travel inland	267
		227004 Fuel, Lubricants and Oils	265
		228001 Maintenance - Civil	252
		228002 Maintenance - Vehicles	287
		228003 Maintenance – Machinery, Equipment & Furniture	102
		273102 Incapacity, death benefits and funeral expenses	168
		<b>Total</b>	<b>5,919</b>
		Wage Recurrent	0

### Reasons for Variation in performance

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	US\$ Thousand
		Non Wage Recurrent	5,919
		AIA	0
		<b>Total For SubProgramme</b>	<b>12,505</b>
		Wage Recurrent	0
		Non Wage Recurrent	12,505
		AIA	0

### Recurrent Programmes

#### Subprogram: 26 NARO Internal Audit

#### Outputs Provided

#### Output: 03 Internal Audit

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
1) Internal audit staff capacity developed.	1) 4 Internal Audit staff's capacity developed	<b>Item</b>	<b>Spent</b>
2) Mid-year financial statement and value for money audit.		221002 Workshops and Seminars	16,468
3) One reports on Internal Audit value-added services to management and the organization as a whole produced.	2) 1 report on analysis of End of- year balances and financial statements for the period ended 30th June 2021	221003 Staff Training	3,550
4) One Investigation reports.		227001 Travel inland	8,757
5) One Governance and Environmental audits reports produced.	3) 1 reports on Internal Audit value added services to management and the organization as a whole produced.		
6) One IFMS Compliance budget compliance reports produced.			
7) One Final year performance review workshop conducted.	4) 1 report on special circumstances produced		
8) One Risk management report produced	5) 1 reports on Governance, risk and control produced		
9) One Human Resources and Payroll audit report produced.	7) I report on IFMS Compliance budget report produced		
10) One Core research/Value for Money audit report produced.	8) I Risk management report produced		
11) Risk Management strengthened.	9) Financial and compliance Audit reports produced.		
12) Reports on High and medium risks produced.	10) Annual performance report and action log produced.		
13) Risk Register updated.	11) Procurement Audit report produced.		
	12) Assets management, fleet and Utilities audit report produced		
	13) CGS report produced.		
	14) Risk management policy and procedural manual discussed.		
	15) Report on High and medium risks produced Risk Register updated.		

### Reasons for Variation in performance

<b>Total</b>	<b>28,775</b>
Wage Recurrent	0
Non Wage Recurrent	28,775

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
			AIA 0
		<b>Total For SubProgramme</b>	<b>28,775</b>
		Wage Recurrent	0
		Non Wage Recurrent	28,775
			AIA 0

### Recurrent Programmes

#### Subprogram: 27 National Coffee Research Institute

##### Outputs Provided

##### Output: 01 Generation of agricultural technologies

For CWD, occurrence and distribution determined in 5 coffee growing regions, 2 protein and DNA-based protocols developed for diagnosis, 2 coffee host defense mechanisms unravel approaches. 2 resistance specific bio-markers	Additional data input for designing drone surveillance system for CWD incidence and distribution from Kakumiro, Kibaale and Kagadi districts ? An effective APP for relaying CWD information from the field to the central database available.	Item	Spent
		211103 Allowances (Inc. Casuals, Temporary)	305
		221001 Advertising and Public Relations	189
		221011 Printing, Stationery, Photocopying and Binding	13
		225001 Consultancy Services- Short term	1,363
		227001 Travel inland	2,255
		227004 Fuel, Lubricants and Oils	527

##### Reasons for Variation in performance

<b>Total</b>	<b>4,653</b>
Wage Recurrent	0
Non Wage Recurrent	4,653
AIA	0

##### Output: 02 Research extension interface promoted and strengthened

Strengthen the institute with 5 computer accessories and utilized in training farmers and extension agents.	(1) Strengthened NACORI ICT capacity for training farmers and extension staff (2) 20,000 seedlings for candidate Arabica coffee varieties initiated, Mother garden for Arabica coffee established at Bugusege substation.	Item	Spent
		221008 Computer supplies and Information Technology (IT)	403

##### Reasons for Variation in performance

<b>Total</b>	<b>403</b>
Wage Recurrent	0
Non Wage Recurrent	403
AIA	0

##### Output: 04 Agricultural research capacity strengthened

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
Institutional research capacity strengthened through 4 (four) Advisory committee meetings, and 4 routine maintenance,3 research papers published	1) NACORI Human resource contract staff remunerated, facilitated and welfare enhanced. (2) NACORI physical resources managed and maintained. These include motor vehicle fleet , offices, office buildings and utilities (3) NACORI financial resources managed and maintained. (4) NACORI research agenda strengthened. by facilitating NACORI AD, NACORI Director and staff and officers	<b>Item</b>	<b>Spent</b>
		211103 Allowances (Inc. Casuals, Temporary)	1,249
		221001 Advertising and Public Relations	164
		221009 Welfare and Entertainment	2,159
		221011 Printing, Stationery, Photocopying and Binding	205
		222001 Telecommunications	206
		223004 Guard and Security services	798
		223005 Electricity	504
		224004 Cleaning and Sanitation	402
		228001 Maintenance - Civil	504
		228002 Maintenance - Vehicles	700
		228003 Maintenance – Machinery, Equipment & Furniture	302
		273102 Incapacity,death benefits and funeral expenses	272

### Reasons for Variation in performance

<b>Total</b>	<b>7,463</b>
Wage Recurrent	0
Non Wage Recurrent	7,463
AIA	0
<b>Total For SubProgramme</b>	<b>12,519</b>
Wage Recurrent	0
Non Wage Recurrent	12,519
AIA	0

### Development Projects

#### Project: 0382 Support for NARO

##### Outputs Provided

#### Output: 01 Generation of agricultural technologies



# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
a) Continue the development of candidate vaccines for (anti-tick, multi strain FMD and 3 African Swine Fever Genotype and X vaccine)	1. 22 new varieties/ prototypes submitted to Variety Release Committee for release	<b>Item</b>	<b>Spent</b>
b) 21 varieties submitted to VRC	2. 128 production technologies generated.	211103 Allowances (Inc. Casuals, Temporary)	25,403
c) 70 Research innovations	3. 38 research studies under competitive grants scheme (CGS)	221001 Advertising and Public Relations	12,770
d) Support on going 64 research studies.	4. 30 scientific publications	221002 Workshops and Seminars	232,452
e) 30 scientific publications	5 A technical preliminary vaccine evaluation report written and submitted to MAAIF	221003 Staff Training	34,430
	6. Run Most SPBE tests for serotypes O,A Sat1 and Sat2 for the vaccine experiments.	221008 Computer supplies and Information Technology (IT)	15,524
	7. Work still on going on development of candidate vaccines for (anti-tick, multi strain FMD and 3 African Swine Fever	221011 Printing, Stationery, Photocopying and Binding	35,485
		222003 Information and communications technology (ICT)	3,964
		223004 Guard and Security services	237
		223005 Electricity	15,756
		224001 Medical Supplies	61,833
		224006 Agricultural Supplies	1,175,494
		227001 Travel inland	139,413
		227004 Fuel, Lubricants and Oils	55,756
		228001 Maintenance - Civil	40,000
		228002 Maintenance - Vehicles	5,462
		228003 Maintenance – Machinery, Equipment & Furniture	20,000

### Reasons for Variation in performance

<b>Total</b>	<b>1,873,978</b>
GoU Development	1,873,978
External Financing	0
AIA	0

**Output: 02 Research extension interface promoted and strengthened**

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
70 technologies delivered to uptake pathways (fish kiln,bio fortified and high yielding varieties) for improved production and productivity of key commodities of economic importance.	1. 78 technological innovation platforms established/supported	<b>Item</b>	<b>Spent</b>
	2. 131 technological innovations delivered to uptake pathways.	211103 Allowances (Inc. Casuals, Temporary)	24,058
21 platforms supported.		221001 Advertising and Public Relations	45,459
		221002 Workshops and Seminars	439,165
		221003 Staff Training	23,171
		221007 Books, Periodicals & Newspapers	10,750
		221008 Computer supplies and Information Technology (IT)	27,707
		221011 Printing, Stationery, Photocopying and Binding	124
		222001 Telecommunications	1,810
		222003 Information and communications technology (ICT)	273,243
		224001 Medical Supplies	24,435
		224006 Agricultural Supplies	264,182
		225001 Consultancy Services- Short term	130
		226001 Insurances	1,596
		226002 Licenses	270
		227001 Travel inland	101,003
		227004 Fuel, Lubricants and Oils	13,481
		228001 Maintenance - Civil	12,801
		228002 Maintenance - Vehicles	15,298
		<b>Total</b>	<b>1,278,683</b>
		GoU Development	1,278,683
		External Financing	0
		AIA	0

### Reasons for Variation in performance

**Output: 04 Agricultural research capacity strengthened**

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

		Item	Spent
A) Staff capacity for 5 staff strengthened in short and long term training (PhD, master and short term training for refresher.	A) Human resource capacity strengthened as follows:	211103 Allowances (Inc. Casuals, Temporary)	10,949
	a) Salaries and welfare for staff paid for 901	221001 Advertising and Public Relations	3,550
	b) Staff welfare benefit paid.	221002 Workshops and Seminars	228,069
B)- Short term skills improvement programmes conducted for 16 PARI	b) Short term skills improvement programmes conducted for 16 PARI and	221003 Staff Training	565,725
	c) NAROSEC, 5 staff supported to undertake MSc and PhD study programme.	221004 Recruitment Expenses	418
4) Enhanced NARO visibility.	d) Annual subscription paid for 30 staff who belong to professional bodies. e) 30 Staff Recruited and appointed in accordance with staff establishment.	221008 Computer supplies and Information Technology (IT)	33,973
		221009 Welfare and Entertainment	8,250
		221011 Printing, Stationery, Photocopying and Binding	24,186
	B) Procurement and supplies were acquired for the smooth and effective agricultural research service delivery as follows: 1) Agricultural Supplies. Running Framework Contracts on-going. Contracts awarded as and when need arises. The following contract were signed, supplies delivered, Payment effected and Contract closed. a) Supply of Uniforms, Beddings and Protective Gear	221012 Small Office Equipment	5,100
	b) Printing, Stationery and Binding c) Printing of NARO Annual Report. d) Printing of UJAS Booklets Printing of Compendium Booklets. e) Supply of Assorted Stationery f) Printing of Assorted.	221016 IFMS Recurrent costs	55,000
	Information Material f) Supply of Assorted Toners Supply of Tonner for Heavy Duty Photocopiers g) Printing of NARO Customised Letter Heads h) Supply of additional copies of NARO Annual work plans i) Cleaning and Sanitation . j) Insurance of Motor Vehicles. k) Agricultural Supplies (Procurements handled at Institutes) l) Motor Vehicle Repairs/Maintenance m) Medical and Veterinary Supplies.	221017 Subscriptions	21,855
	B) Supply of Ankole Animals	222002 Postage and Courier	150
		222003 Information and communications technology (ICT)	1,438
	15) NARO Grants Office Establishment. Contracts Signed, Assignment still ongoing	223002 Rates	103,980
		223005 Electricity	21,230
		223006 Water	1,000
		224004 Cleaning and Sanitation	111
		225001 Consultancy Services- Short term	38,542
		226001 Insurances	438
		226002 Licenses	93,284
		227001 Travel inland	166,177
		227004 Fuel, Lubricants and Oils	8,221
		228001 Maintenance - Civil	122,329
		228002 Maintenance - Vehicles	17,521
		228003 Maintenance – Machinery, Equipment & Furniture	148,381
		228004 Maintenance – Other	2,581
	C) NARO visibility enhanced with the following:		
	(a) Supply of Promotional Items for Stakeholders (b) Development of NARO Wide Website (c) Provision of NARO Wide Media Services-Phase 1 (d) Provision of Photography services (e) Promotion of NARO online promotional and visibility		

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
----------------------------	------------------------------------	---	------------------

### Reasons for Variation in performance

<b>Total</b>	<b>1,682,457</b>
GoU Development	1,682,457
External Financing	0
AIA	0

### Outputs Funded

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

	Item	Spent
NARO's subscription to four (04) international organisation maintained for improved image and future resources mobilization for research.	NARO's subscription to ASARECA, ARICA-RICE, 262201 Contributions to International Organisations (Capital)	444,889
	264101 Contributions to Autonomous Institutions	5,000

### Reasons for Variation in performance

NARO's subscription to ASARECA, ARICA-RICE,.Bioversity International (3rd cash contribution)

<b>Total</b>	<b>449,889</b>
GoU Development	449,889
External Financing	0
AIA	0

### Capital Purchases

#### Output: 72 Government Buildings and Administrative Infrastructure

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

		Item	Spent
A) Works progress to be at 100% completion for the following:	Contracts signed. Inception Report submitted. Contract under Implementation. for t consultancy services for design & preparation of BOQs for	281501 Environment Impact Assessment for Capital Works	15,000
1) Construction of NACORI multipurpose laboratory.	1) construction of an administration Block and a value addition facility at NaCORI,	281502 Feasibility Studies for Capital Works	15,000
2) seed facility completed at Mbarara ZARDI .	2) construction of a NARO Technology & Innovation Exhibition Centre at NARO Secretariat	281503 Engineering and Design Studies & Plans for capital works	241,647
3) 800m Perimeter Wall fence construction at Nakyesasa	3) supervision of civil works-aflasafe and vaccine Facility.	281504 Monitoring, Supervision & Appraisal of Capital work	236,521
4) Fencing experimental field sites at Nabuin ZARDI	4) Completion of the Food-Bioscience laboratory at NARL, Construction of an Agricultural	312101 Non-Residential Buildings	669,954
5) Rehabilitation of Bugusege satellite research station	5) Engineering & research facility at Namalere and	312102 Residential Buildings	21,158
6) Rehabilitation of Abi ZARDI staff houses and Laboratory	6) Construction of a Pharmacological research & production facility at NaFORRI.	312104 Other Structures	2,400,632
7) Construction of staff houses at Kigumba satellite			
8) 400m Road works construction at Nakyesasa.			
9) Silage Bunks construction at Nakyesasa.			
10) Hay barn construction at Maruzi.			
11) Aquatic Laboratory construction at Kajansi ARDC.			
B) Project work progress between 25%-70% complete for the following:			
1) Namalele Administration block construction at Namalere			
2) Rwebitaba external works			
3) Rehabilitation/Small Works and construction of reception at NAROSEC			
4) Rehabilitation/Small Works and External painting, carpot repairs & parking patching works at NAROSEC			
5) Aflasafe plant construction at Nakyesasa			
6) Multi purpose vaccine facility construction at Nakyesasa			
7) construction of start up structures (paddock fencing, cattle dip,water reticulation, fencing, toilet hay barn & containers), at Maruzi			
8) Construction of a Milk Quality Control Platform & Production Storage at NaLIRRI			
9) Installation of Solar power at eleven Stations			
10) Construction of a seed store for the seed sorting plant at Mbarara			
11) Construction of a Hass screen House at NAFORRI			
12) Monitoring, Supervision & Appraisal of capital works			
13) Engineering design studies			
14) Feasibility studies for capital works			

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
----------------------------	------------------------------------	---	------------------

### Reasons for Variation in performance

<b>Total</b>	<b>3,599,912</b>
GoU Development	3,599,912
External Financing	0
AIA	0

### Output: 76 Purchase of Office and ICT Equipment, including Software

A standard range of ICT products and services offered to include the following:  
1) MOU cleared for Data center services from NITA-U to host and backup NARO applications

2) Integrated WAN services; VoIP, file sharing, printing services and financial management system(Ms Dynamics) shared between 3) NAROSEC and three institutes; MuZARDI, NaFORRI, BuZARDI. 2. Extended NBI to BuZARDI, AbiZARDI, MbaZARDI and ARDC-4) Kajjansi for internet and other leased line communication services.

5) 6 Laptops, 12 Desktops, 11 UPS, 18 Audio recorders, 9 universal routers procured.

6) Procurement undergoing for the SLA of preventive maintenance, repair and service of ICT equipment

7) 1. Kaspersky endpoint antivirus licenses procured for 250 users. 2. Acquired zoom licenses to Manage an online meeting "NARO half year review and planning virtual meeting" and other online meetings in different institutes like NaCRRI, NaLIRRI, BuZARDI and NaFORRI. 3.

8) Capacity gap assessment report made for the conducted online meeting

9) Scheduled training for all systems administrator in streamling of ICT operations and procedures to be included in the ICT manual:

8) Supply of Assorted IT Equipment - Lot.1-All in One Desktop-Lot.2-Desktop Computers, Lot.3-Laptops, Lot.4-UPSs

9) Supply and Installation of Audio Visual Equipment

10) ICT Internvetion -WAN in PARIs.

A) Supplies delivered, payment effected and contract closed.

1) Supply of Kaspersky End Users Antivirus

2) Board Portal Software, Audio Visual Equipment

3). Assorted IT Equipment

4). Preventive and Remedial Maintenance of Assorted ICT Equipment i.e

Maintenance of Kyocera Photocopiers, Supply of Kaspersky End Users Antivirus

5) Provision of Licenses for an Intranet based contract management portal and data integration and back up solution,

6) Supply and Installation of Software for a dedicated cloud server.

7) Network Switch and Router.

8) Installation of Electrical Works

Item	Spent
312213 ICT Equipment	29,689

### Reasons for Variation in performance

<b>Total</b>	<b>29,689</b>
--------------	---------------

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	US\$ Thousand
		GoU Development	29,689
		External Financing	0
		AIA	0

### Output: 77 Purchase of Specialised Machinery & Equipment

A) Procurement of the following goods and non consultancy Services:	A) Supplies delivered, payments effected and contracts closed.	Item	Spent
Supply of Specialised In Vitro Embryology Equipment	1) Supply and Installation of fish encapsulation Machine.	312202 Machinery and Equipment	587,302
Supply and Installation of Floating Fish Feed Equipment	2) Supply of specialized in-vitro embryology equipment	312214 Laboratory Equipments	2,915,854
Supply and Installation of Incubation Equipment & Assorted Machinery	3) Supply of tractors and other specialized with assorted implements.		
Supply of Specialised Machinery & Equipment	4) Supply and installation of electricity and lightening conductors in Kalyengyere.		
Supply of Machinery & Equipment - Avocado	B) Contract signed and awaiting delivery		
Specialised Laboratory & Vaccine Equipment	1) Supply of Specialized Machinery Vaccine Equipment.		
Supply of Tractors with Assorted Implements	2) Supply and Installation of Floating Fish Feed Equipment.		
	3) Specialised Laboratory & Vaccine Equipment . Contract Signed. Advance Payment effected and balance of Ugx 2,868,033,088 opened thru letter of credit. Some items delivered and balance to be effected in December 2021.		

#### Reasons for Variation in performance

<b>Total</b>	<b>3,503,156</b>
GoU Development	3,503,156
External Financing	0
AIA	0

### Output: 78 Purchase of Office and Residential Furniture and Fittings

Supply of Furniture & Fittings .	1) -Supply and Installation of customized book shelves.	Item	Spent
		312203 Furniture & Fixtures	5,166
	2) Supply of Furniture-Mini Kitchen in DOF and DGs office.		

#### Reasons for Variation in performance

<b>Total</b>	<b>5,166</b>
GoU Development	5,166
External Financing	0
AIA	0
<b>Total For SubProgramme</b>	<b>12,422,931</b>
GoU Development	12,422,931
External Financing	0

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Outputs Planned in Quarter	Actual Outputs Achieved in Quarter	Expenditures incurred in the Quarter to deliver outputs	UShs Thousand
			AIA 0

### Development Projects

#### Project: 1560 Relocation and Operationalisation of the National Livestock Resources Research Institute (NALIRRI)

##### Outputs Provided

##### Output: 01 Generation of agricultural technologies

		Item	Spent
2300MT of silage and hay produced for dry season feeding 350 MT of grain soya, maize and sunflower produced efficient livestock feed 3.1 MT of forage seed procured	1) 5 tons of chloris seed harvested;	211103 Allowances (Inc. Casuals, Temporary)	78,000
	2) 38 elite calves produced to constitute the elite research and embryo production herd at NaLIRRI	224006 Agricultural Supplies	20,250
		227001 Travel inland	2,000
		227004 Fuel, Lubricants and Oils	14,000
		228002 Maintenance - Vehicles	24,000
		228003 Maintenance – Machinery, Equipment & Furniture	29,750

##### Reasons for Variation in performance

<b>Total</b>	<b>168,000</b>
GoU Development	168,000
External Financing	0
AIA	0

### Capital Purchases

#### Output: 72 Government Buildings and Administrative Infrastructure

		Item	Spent
Assorted Multipurpose Office Blocks at Maruzi. Contract Signed. Works Commenced.	1) External works for administration/ office block, hay barn, grain store, residential facilities and livestock structures undertaken	312101 Non-Residential Buildings	500,000
	2) Infrastructural development master plan developed like road networks, fence etc		

##### Reasons for Variation in performance

<b>Total</b>	<b>500,000</b>
GoU Development	500,000
External Financing	0
AIA	0
<b>Total For SubProgramme</b>	<b>668,000</b>
GoU Development	668,000
External Financing	0
AIA	0

<b>GRAND TOTAL</b>	<b>26,205,035</b>
Wage Recurrent	9,308,307
Non Wage Recurrent	3,805,797



---

**Vote:142** National Agricultural Research Organisation

---

**QUARTER 4: Outputs and Expenditure in Quarter**

---

GoU Development	13,090,931
External Financing	0
AIA	0

---