

# 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	34.233	34.233	34.233	100.0%	100.0%	100.0%
Non Wage	24.604	24.232	24.232	98.5%	98.5%	100.0%
Devt. GoU	51.473	50.326	50.326	97.8%	97.8%	100.0%
Ext. Fin.	0.000	0.000	0.000	0.0%	0.0%	0.0%
<b>GoU Total</b>	<b>110.310</b>	<b>108.791</b>	<b>108.791</b>	<b>98.6%</b>	<b>98.6%</b>	<b>100.0%</b>
<b>Total GoU+Ext Fin (MTEF)</b>	<b>110.310</b>	<b>108.791</b>	<b>108.791</b>	<b>98.6%</b>	<b>98.6%</b>	<b>100.0%</b>
Arrears	0.298	0.298	0.298	100.0%	100.0%	100.0%
<b>Total Budget</b>	<b>110.608</b>	<b>109.089</b>	<b>109.089</b>	<b>98.6%</b>	<b>98.6%</b>	<b>100.0%</b>
<i>A.I.A Total</i>	0.000	0.000	0.000	0.0%	0.0%	0.0%
<b>Grand Total</b>	<b>110.608</b>	<b>109.089</b>	<b>109.089</b>	<b>98.6%</b>	<b>98.6%</b>	<b>100.0%</b>
<b>Total Vote Budget Excluding Arrears</b>	<b>110.310</b>	<b>108.791</b>	<b>108.791</b>	<b>98.6%</b>	<b>98.6%</b>	<b>100.0%</b>

Table V1.2: Releases and Expenditure by Programme and Sub-SubProgramme\*

<i>Billion Uganda Shillings</i>	Approved Budget	Released	Spent	% Budget Released	% Budget Spent	%Releases Spent
Programme: Agro-Industrialisation	110.31	108.79	108.79	98.6%	98.6%	100.0%
Sub-SubProgramme: 51 Agricultural Research	110.31	108.79	108.79	98.6%	98.6%	100.0%
<b>Total for Vote</b>	<b>110.31</b>	<b>108.79</b>	<b>108.79</b>	<b>98.6%</b>	<b>98.6%</b>	<b>100.0%</b>

### Matters to note in budget execution

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### 1. Climate variability

During the reporting period, there was severe drought which affected agricultural research interventions such as demonstrations, on-farm trials and seed multiplication sites. Evaluation of research performance was affected as these interventions must be repeated to collect more data. Irrigation facilities should be provided for sustainability.

### 2. Enabling laws

The biosafety bill has not been passed by parliament. Under the bill, agricultural would take advantage of technologies related to genetic engineering aimed for higher agricultural productivity. Scientists have trained in genetic engineering skills and eager to apply them given the current food situation in Uganda.

### 3. Inadequate financing of agricultural research

Over the last decade, agricultural research has been and still funded under project mode yet research requires stable funding regime to enable uninterrupted research process. We therefore recommend a deliberate effort by government to put in place a sustainable research fund to enable timely delivery of research products and services for food and nutritional security.

### 4. Transport equipment

Budget execution during the reporting period was affected by inadequate and inefficient transport equipment which is above the recommended mileage of 250,000 kilometers or five years. NARO has consistently suffered the prohibition on purchase of vehicles for the last six years which has affected the mobility of scientists to conduct research, hence reducing performance. A special government intervention is required for improved performance.

**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>	
<b>Sub-SubProgramme 51 Agricultural Research</b>	
<b>0.260 Bn Shs</b>	<b>Department/Project :1619 Retooling of National Agricultural Research Organization</b>
Reason:	
<i>Items</i>	
<b>260,000,000.000 UShs</b>	<b>312202 Machinery and Equipment</b>
Reason: This is due to re-allocation made during the QTR. UGX 260mn re-allocated from Gou recurrent accounting warrant to GOU Development Budget	

## V2: Performance Highlights

**Table V2.1: Sub-SubProgramme Outcome and Outcome Indicators\***

<b>Sub-SubProgramme : 51 Agricultural Research</b>
<b>Responsible Officer: Director General</b>

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## QUARTER 4: Highlights of Vote Performance

Sub-SubProgramme Outcome: Increased production and productivity of priority and strategic commodities			
Sub-SubProgramme Outcome Indicators	Indicator Measure	Planned 2021/22	Actuals By END Q4
Percentage of new varieties promoted and adopted by farmers and other users	Percentage	14%	12.5%
Number of commercialisable technologies and innovations generated through competitive grant projects	Number	10	15
Increased production and productivity at some level resulting from utilization of improved technologies	Percentage	2%	1.8%

**Table V2.2: Budget Output Indicators\***

### Performance highlights for the Quarter

NARO undertook a study on the impact of NARO improved agricultural technologies on livelihoods of farmers. The study revealed that 79% and 60% of farmers were using improved NARO maize and beans varieties, respectively. Beans and maize were reported to contributed 48% (Ugx 2.08M) and 36% (Ugx 1.65M) of the total household incomes. The results further revealed that households that adopt NARO technologies are 76% food secure compared to the non-adopters (63%). Beans and maize contributed 43 and 53% female and male energy intake respectively. The estimated national benefits of adopting improved maize technologies were USD 22M, 45 and 65 at adoption rates of 25%, 50% and 75% respectively. For beans, this stood at USD 4M, 8, and 13. The difference is largely due to larger areas under technology for maize technologies and a higher adoption rate.

The number of products and services was 15; 8 food/nutritional security and 7 for industry. Fifty-three (53) Information, educational and communication materials to support technology development and transfer, were produced. These included manuals, publications and protocol. Anti-tick vaccine product was cleared by National Drug Authority (NDA) for geographical trials. The NDA geographical trial certificate was secured for the anti-tick vaccine product and 5,000 trial doses were manufactured.

During the reporting two (2) out of five (5) new research laboratories were constructed. These were Aflasafe lab at 80% and; vaccine research and production facility at 70%.

## V3: Details of Releases and Expenditure

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

<i>Billion Uganda Shillings</i>	Approved Budget	Released	Spent	% GoU Budget Released	% GoU Budget Spent	%GoU Releases Spent
<b>Sub-SubProgramme 51 Agricultural Research</b>	<b>110.61</b>	<b>109.09</b>	<b>109.09</b>	<b>98.6%</b>	<b>98.6%</b>	<b>100.0%</b>
<i>Class: Outputs Provided</i>	<i>79.32</i>	<i>77.80</i>	<i>77.80</i>	<i>98.1%</i>	<i>98.1%</i>	<i>100.0%</i>
015101 Generation of agricultural technologies	16.63	15.74	15.74	94.7%	94.7%	100.0%
015102 Research extension interface promoted and strengthened	4.12	3.93	3.93	95.4%	95.4%	100.0%
015103 Internal Audit	0.18	0.15	0.15	80.6%	80.6%	100.0%
015104 Agricultural research capacity strengthened	58.40	57.99	57.99	99.3%	99.3%	100.0%

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## 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: Outputs Funded</b>	<b>1.84</b>	<b>1.84</b>	<b>1.84</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
015151 Payments to International Organisations (CGIAR, ASARECA, WARDA)	1.84	1.84	1.84	100.0%	100.0%	100.0%
<b>Class: Capital Purchases</b>	<b>29.14</b>	<b>29.14</b>	<b>29.14</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
015172 Government Buildings and Administrative Infrastructure	25.33	25.07	25.07	99.0%	99.0%	100.0%
015176 Purchase of Office and ICT Equipment, including Software	0.11	0.11	0.11	100.0%	100.0%	100.0%
015177 Purchase of Specialised Machinery & Equipment	3.51	3.77	3.77	107.4%	107.4%	100.0%
015178 Purchase of Office and Residential Furniture and Fittings	0.20	0.20	0.20	100.0%	100.0%	100.0%
<b>Class: Arrears</b>	<b>0.30</b>	<b>0.30</b>	<b>0.30</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
015199 Arrears	0.30	0.30	0.30	100.0%	100.0%	100.0%
<b>Total for Vote</b>	<b>110.61</b>	<b>109.09</b>	<b>109.09</b>	<b>98.6%</b>	<b>98.6%</b>	<b>100.0%</b>

**Table V3.2: 2021/22 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>79.32</b>	<b>77.80</b>	<b>77.80</b>	98.1%	98.1%	100.0%
211102 Contract Staff Salaries	34.23	34.23	34.23	100.0%	100.0%	100.0%
211103 Allowances (Inc. Casuals, Temporary)	3.06	3.06	3.06	100.0%	100.0%	100.0%
212101 Social Security Contributions	3.42	3.42	3.42	100.0%	100.0%	100.0%
213001 Medical expenses (To employees)	1.00	1.00	1.00	100.0%	100.0%	100.0%
213002 Incapacity, death benefits and funeral expenses	0.91	0.91	0.91	100.0%	100.0%	100.0%
213004 Gratuity Expenses	8.56	8.56	8.56	100.0%	100.0%	100.0%
221001 Advertising and Public Relations	0.79	0.79	0.79	100.0%	100.0%	100.0%
221002 Workshops and Seminars	1.94	0.46	0.46	23.7%	23.7%	100.0%
221003 Staff Training	0.86	0.86	0.86	100.0%	100.0%	100.0%
221004 Recruitment Expenses	0.09	0.09	0.09	100.0%	100.0%	100.0%
221006 Commissions and related charges	0.09	0.09	0.09	100.0%	100.0%	100.0%
221007 Books, Periodicals & Newspapers	0.06	0.06	0.06	100.0%	100.0%	100.0%
221008 Computer supplies and Information Technology (IT)	1.58	1.58	1.58	100.0%	100.0%	100.0%
221009 Welfare and Entertainment	0.49	0.49	0.49	100.0%	100.0%	100.0%
221011 Printing, Stationery, Photocopying and Binding	0.63	0.63	0.63	100.0%	100.0%	100.0%
221012 Small Office Equipment	0.03	0.03	0.03	100.0%	100.0%	100.0%
221016 IFMS Recurrent costs	0.18	0.18	0.18	100.0%	100.0%	100.0%
221017 Subscriptions	0.07	0.07	0.07	100.0%	100.0%	100.0%
222001 Telecommunications	0.21	0.21	0.21	100.0%	100.0%	100.0%
222002 Postage and Courier	0.01	0.01	0.01	100.0%	100.0%	100.0%

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## QUARTER 4: Highlights of Vote Performance

222003 Information and communications technology (ICT)	0.96	0.96	0.96	100.0%	100.0%	100.0%
223002 Rates	0.05	0.05	0.05	100.0%	100.0%	100.0%
223004 Guard and Security services	0.30	0.30	0.30	100.0%	100.0%	100.0%
223005 Electricity	0.57	0.57	0.57	100.0%	100.0%	100.0%
223006 Water	0.11	0.11	0.11	100.0%	100.0%	100.0%
224001 Medical Supplies	1.45	1.45	1.45	100.0%	100.0%	100.0%
224004 Cleaning and Sanitation	0.28	0.28	0.28	100.0%	100.0%	100.0%
224005 Uniforms, Beddings and Protective Gear	0.09	0.09	0.09	100.0%	100.0%	100.0%
224006 Agricultural Supplies	7.40	7.40	7.40	100.0%	100.0%	100.0%
225001 Consultancy Services- Short term	0.66	0.66	0.66	100.0%	100.0%	100.0%
226001 Insurances	0.13	0.13	0.13	100.0%	100.0%	100.0%
226002 Licenses	0.19	0.19	0.19	100.0%	100.0%	100.0%
227001 Travel inland	5.11	5.11	5.11	100.0%	100.0%	100.0%
227002 Travel abroad	0.03	0.00	0.00	0.0%	0.0%	0.0%
227004 Fuel, Lubricants and Oils	1.56	1.56	1.56	100.0%	100.0%	100.0%
228001 Maintenance - Civil	0.62	0.62	0.62	100.0%	100.0%	100.0%
228002 Maintenance - Vehicles	0.87	0.87	0.87	100.0%	100.0%	100.0%
228003 Maintenance – Machinery, Equipment & Furniture	0.57	0.57	0.57	100.0%	100.0%	100.0%
228004 Maintenance – Other	0.04	0.04	0.04	100.0%	100.0%	100.0%
273102 Incapacity, death benefits and funeral expenses	0.10	0.10	0.10	100.0%	100.0%	100.0%
<b>Class: Outputs Funded</b>	<b>1.84</b>	<b>1.84</b>	<b>1.84</b>	100.0%	100.0%	100.0%
262201 Contributions to International Organisations (Capital)	1.80	1.80	1.80	100.0%	100.0%	100.0%
264101 Contributions to Autonomous Institutions	0.04	0.04	0.04	100.0%	100.0%	100.0%
<b>Class: Capital Purchases</b>	<b>29.14</b>	<b>29.14</b>	<b>29.14</b>	100.0%	100.0%	100.0%
281504 Monitoring, Supervision & Appraisal of Capital work	1.40	1.40	1.40	100.0%	100.0%	100.0%
312101 Non-Residential Buildings	20.67	20.41	20.41	98.7%	98.7%	100.0%
312102 Residential Buildings	1.89	1.89	1.89	100.0%	100.0%	100.0%
312104 Other Structures	1.36	1.36	1.36	100.0%	100.0%	100.0%
312202 Machinery and Equipment	2.31	2.57	2.57	111.3%	111.3%	100.0%
312203 Furniture & Fixtures	0.20	0.20	0.20	100.0%	100.0%	100.0%
312213 ICT Equipment	0.11	0.11	0.11	100.0%	100.0%	100.0%
312214 Laboratory Equipments	1.20	1.20	1.20	100.0%	100.0%	100.0%
<b>Class: Arrears</b>	<b>0.30</b>	<b>0.30</b>	<b>0.30</b>	100.0%	100.0%	100.0%
321613 Telephone arrears (Budgeting)	0.14	0.14	0.14	100.0%	100.0%	100.0%
321614 Electricity arrears (Budgeting)	0.16	0.16	0.16	100.0%	100.0%	100.0%
<b>Total for Vote</b>	<b>110.61</b>	<b>109.09</b>	<b>109.09</b>	98.6%	98.6%	100.0%

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

# 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>Sub-SubProgramme 0151 Agricultural Research</b>	<b>110.61</b>	<b>109.09</b>	<b>109.09</b>	<b>98.6%</b>	<b>98.6%</b>	<b>100.0%</b>
<i>Departments</i>						
01 Headquarters	51.67	51.66	<b>51.66</b>	100.0%	100.0%	100.0%
07 National Crops Resources Research Institute	0.24	0.24	<b>0.24</b>	98.4%	98.4%	100.0%
08 National Fisheries Resources Research Institute	0.33	0.32	<b>0.32</b>	95.8%	95.8%	100.0%
09 National Forestry Resources Research Institute	0.23	0.22	<b>0.22</b>	95.7%	95.7%	100.0%
10 National Livestock Resources Research	2.24	2.12	<b>2.12</b>	94.7%	94.7%	100.0%
11 National Semi arid Resources Research	0.44	0.40	<b>0.40</b>	91.6%	91.6%	100.0%
12 National Laboratories Research	1.19	1.14	<b>1.14</b>	95.8%	95.8%	100.0%
13 Abi ZARDI	0.19	0.19	<b>0.19</b>	97.9%	97.9%	100.0%
14 Bulindi ZARDI	0.20	0.19	<b>0.19</b>	95.0%	95.0%	100.0%
15 Kachwekano ZARDI	0.19	0.18	<b>0.18</b>	95.8%	95.8%	100.0%
16 Mukono ZARDI	0.35	0.35	<b>0.35</b>	98.6%	98.6%	100.0%
17 Ngetta ZARDI	0.20	0.19	<b>0.19</b>	97.6%	97.6%	100.0%
18 Nabium ZARDI	0.20	0.19	<b>0.19</b>	93.5%	93.5%	100.0%
19 Mbarara ZARDI	0.19	0.19	<b>0.19</b>	100.0%	100.0%	100.0%
20 Buginyaya ZARDI	0.35	0.34	<b>0.34</b>	96.7%	96.7%	100.0%
21 Rwebitaba ZARDI	0.49	0.47	<b>0.47</b>	95.7%	95.7%	100.0%
26 NARO Internal Audit	0.18	0.15	<b>0.15</b>	80.6%	80.6%	100.0%
27 National Coffee Research Institute	0.25	0.24	<b>0.24</b>	97.1%	97.1%	100.0%
<i>Development Projects</i>						
1560 Relocation and Operationalisation of the National Livestock Resources Research Institute (NALIRRI)	5.00	5.00	<b>5.00</b>	100.0%	100.0%	100.0%
1619 Retooling of National Agricultural Research Organization	46.47	45.33	<b>45.33</b>	97.5%	97.5%	100.0%
<b>Total for Vote</b>	<b>110.61</b>	<b>109.09</b>	<b>109.09</b>	<b>98.6%</b>	<b>98.6%</b>	<b>100.0%</b>

**Table V3.4: External Financing Releases and Expenditure by Sub-SubProgramme and Project**

<i>Billion Uganda Shillings</i>	Approved Budget	Released	Spent	% Budget Released	% Budget Spent	%Releases Spent
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**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
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Sub-SubProgramme: 51 Agricultural Research

Departments

Department: 01 Headquarters

Outputs Provided

Budget Output: 01 Generation of agricultural technologies

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## 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
2 Impact studies conducted on NARO rice & sorghum, Competitive Grants Scheme (CGS), 4 physical and budget performance monitoring reports generated 1 Annual performance review conducted, 1 Statistical abstract FY2021/22 developed	<p>Two impact studies of NARO improved agricultural technologies on livelihoods of farmers were undertaken. The study on beans and maize revealed that 79% and 60% of farmers were using improved NARO maize and beans varieties, respectively. Beans and maize were reported to contribute 48% (UGX 2.08M) and 36% (UGX 1.65M) of the total household incomes. The results further revealed that households that adopt NARO technologies are 76% food secure compared to the non-adopters at 63%. Findings indicate that the beans and maize contributed 43% and 53% female and male calorific energy intake levels respectively. The estimated national benefits of adopting improved maize technologies were USD 22M, 45M and 65M at adoption rates of 25%, 50% and 75% respectively. For beans, this stood at USD 4M, 8M, and 13M. The difference is largely due to larger areas under technology for maize technologies and a higher adoption rate.</p> <p>The second study on rice and sorghum was initiated, where data collection tools were finalized and await data collection indicating a 20% performance level.</p> <p>NARO conducted and concluded 40 studies under competitive Grants Scheme (CGS). These have run for the past 4 years. The generated information, knowledge, technological packages and products are undergoing final assessment and quality assurance for dissemination.</p> <p>One physical and budget performance monitoring reports were generated and utilized for decision making at various levels.</p> <p>One NARO statistical abstract FY2021/22 was developed to support agricultural research and policy development.</p>	<p><b>Item</b></p> <p>211103 Allowances (Inc. Casuals, Temporary)</p> <p>221006 Commissions and related charges</p> <p>227001 Travel inland</p>	<p><b>Spent</b></p> <p>18,000</p> <p>60,000</p> <p>127,500</p>

### Reasons for Variation in performance

<b>Total</b>	<b>205,500</b>
Wage Recurrent	0



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## 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	205,500
		Arrears	0
		AIA	0

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

		Item	Spent
2 web-based technology promotion Systems developed, 8 technologies protected, 12 IPMC engagements & 12 IP awareness policy coordinated, 8 Technology licensing agreements signed and 8 Business plans & proposals, develop 3 digital based technology platforms	Three (3) web-based technology promotion Systems were developed. These include botanical community seed bank system, Intellectual property, incubation and commercialization system,	221007 Books, Periodicals & Newspapers	7,686
		221011 Printing, Stationery, Photocopying and Binding	100,000
		221012 Small Office Equipment	4,000
		222001 Telecommunications	100,000
		222002 Postage and Courier	5,140
		223005 Electricity	39,352
		223006 Water	20,207
	Two trademarks on NACOFÉ, and Fish oil extraction and one patent on NANO film on food preservation developed for intellectual property, commercialization, to avoid piracy and increased revenue to support research.	227001 Travel inland	31,500
	2 Intellectual property management committee MC engagements on KAZIRE (resistant banana starch) and MOVIT (beauty products from coffee) partnerships. One series of engagement with Competitive Grant Scheme. One engagement with NARO holdings for production and supply of Early generation seed to seed companies for sustainable supply of quality planting materials and seed to farmers.		
	One digital based technology platforms records management system for outreach was developed.		

### Reasons for Variation in performance

	<b>Total</b>	<b>307,885</b>
	Wage Recurrent	0
	Non Wage Recurrent	307,885
	Arrears	0
	AIA	0

### Budget Output: 04 Agricultural research capacity strengthened

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## 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
10 NARO staff supported for MScs and PhDs, 4000 acres of NARO titled, strengthened compliance to 6 international organizations, Coordinated Research oversight in the 16 PARIS, Security enhanced in the 16 NARO PARIS assets and 16 PARI facilities maintained	10 NARO staff competencies enhanced through long term and short term training. (01 PHD, 01 MSC, 8 short term )  500 acres of NARO titled, strengthened compliance to 6 international organizations, FARA, ASARECA, AFRICA-RICE, CGIAR, CABI. 10 supervisory meetings undertaken by top management across PARIS  PARIS assets and facilities such as office buildings, vehicles, compounds and utilities secured, functional and managed effectively and efficiently in 16 PARIS. Financial resources managed, and monitored the fiduciary responsibilities of the various actors in the 16 PARIS.	<b>Item</b> 211102 Contract Staff Salaries 211103 Allowances (Inc. Casuals, Temporary) 212101 Social Security Contributions 213001 Medical expenses (To employees) 213002 Incapacity, death benefits and funeral expenses 213004 Gratuity Expenses 221001 Advertising and Public Relations 221006 Commissions and related charges 221008 Computer supplies and Information Technology (IT) 221009 Welfare and Entertainment 221011 Printing, Stationery, Photocopying and Binding 221016 IFMS Recurrent costs 222001 Telecommunications 222003 Information and communications technology (ICT) 223004 Guard and Security services 223005 Electricity 223006 Water 224001 Medical Supplies 224004 Cleaning and Sanitation 224005 Uniforms, Beddings and Protective Gear 224006 Agricultural Supplies 226001 Insurances 226002 Licenses 227001 Travel inland 227004 Fuel, Lubricants and Oils 228001 Maintenance - Civil 228002 Maintenance - Vehicles 228003 Maintenance – Machinery, Equipment & Furniture 228004 Maintenance – Other 273102 Incapacity, death benefits and funeral expenses	<b>Spent</b> 34,233,229 117,762 3,423,323 1,000,000 900,000 8,558,307 6,000 24,000 5,953 289,400 9,228 93,000 37,440 32,336 93,862 23,372 1,000 114,889 100,000 50,000 486,869 110,000 20,000 226,280 372,304 74,560 259,382 87,663 20,000 75,000

*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
		<b>Total</b>	<b>50,845,158</b>
		Wage Recurrent	34,233,229
		Non Wage Recurrent	16,611,929
		Arrears	0
		<i>AIA</i>	0

*Arrears*

**Budget Output: 99 Arrears**

Item	Spent
321613 Telephone arrears (Budgeting)	137,926
321614 Electricity arrears (Budgeting)	160,000

*Reasons for Variation in performance*

<b>Total</b>	<b>0</b>
Wage Recurrent	0
Non Wage Recurrent	0
Arrears	297,926
<i>AIA</i>	0
<b>Total For Department</b>	<b>51,358,543</b>
Wage Recurrent	34,233,229
Non Wage Recurrent	17,125,314
Arrears	297,926
<i>AIA</i>	0

*Departments*

**Department: 07 National Crops Resources Research Institute**

*Outputs Provided*

**Budget 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
17 varieties for food and nutrition security developed and submitted to the varieties release committee	<p>3 candidate maize varieties were developed to improve nutrition in pro-vitamin A and resistant to striga and high yielding above 6Tonnes per hectare submitted to variety release committee.</p> <p>2 candidate rice varieties comparable to basmati with long grain, aromatic and high yielding submitted to Variety Release Committee</p> <p>Additional field data from NPT and DUS trials being collected to improve the Root crops application for release of the 6 varieties (3 cassava and 3 sweet potato varieties). Process of re-submission of the application is in progress.</p> <p>6 beans varieties (3 bush and 3 climber beans varieties ) are at the last stage of evaluation (Distinct, Uniformity and Stability) test.</p> <p>4 earlier bean candidate varieties were resubmitted with improvements</p>	<p><b>Item</b></p> <p>211103 Allowances (Inc. Casuals, Temporary)</p>	<p><b>Spent</b></p> <p>52,359</p>

### Reasons for Variation in performance

<b>Total</b>	<b>52,359</b>
Wage Recurrent	0
Non Wage Recurrent	52,359
Arrears	0
<i>AIA</i>	0

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

16 technologies delivered to uptake pathways for increased production and productivity	19 technologies (6maize, 2cassava, 3sweetpotato, 3citrus, 5beans) were delivered to uptake pathways for increased production and productivity through platforms , Demos, innovations, On-Farm Trials and Farmer Groups and seed multiplication gardens.	<p><b>Item</b></p> <p>221001 Advertising and Public Relations</p>	<p><b>Spent</b></p> <p>4,000</p>
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### Reasons for Variation in performance

<b>Total</b>	<b>4,000</b>
Wage Recurrent	0
Non Wage Recurrent	4,000
Arrears	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
			AIA 0

### Budget Output: 04 Agricultural research capacity strengthened

1) Three Bio-sciences laboratories maintained.	1) One Bio-sciences laboratories maintained. 2) Four on-station field research facilities (2 screen house and 2 tissue culture labs. ) maintained. 3. One Crop production facility maintained to create enabling environment for Agriculture research Physical resources (offices, laboratories, field machinery, office equipment) maintained and fully functional	Item	Spent
2) Four on-station field research facilities maintained.		211103 Allowances (Inc. Casuals, Temporary)	4,000
3. Six Crop production facilities maintained.		221008 Computer supplies and Information Technology (IT)	6,400
		221009 Welfare and Entertainment	8,000
		221011 Printing, Stationery, Photocopying and Binding	10,000
		222001 Telecommunications	8,000
		223004 Guard and Security services	12,000
		223005 Electricity	40,000
		224004 Cleaning and Sanitation	8,000
		226001 Insurances	1,280
		227001 Travel inland	18,000
		227004 Fuel, Lubricants and Oils	30,000
		228002 Maintenance - Vehicles	32,000
		228003 Maintenance – Machinery, Equipment & Furniture	6,000

### Reasons for Variation in performance

<b>Total</b>	<b>183,680</b>
Wage Recurrent	0
Non Wage Recurrent	183,680
Arrears	0
AIA	0
<b>Total For Department</b>	<b>240,039</b>
Wage Recurrent	0
Non Wage Recurrent	240,039
Arrears	0
AIA	0

### Departments

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

#### Outputs Provided

#### Budget 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
Sixteen thousand five hundred brood stock of fisheries resources acquired for sustainable seed production and Breeding that is; Ten thousand (10,000) Tilapia, Five thousand (5,000) catfish, One thousand (1,000) mirror carp and Five hundred (500) Barbus.	Three fish laboratory and two aquarium maintained & operationalized,  One fish cage research facility was maintained and operationalized to create enabling fisheries research environment.	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 224006 Agricultural Supplies 227001 Travel inland 227004 Fuel, Lubricants and Oils	<b>Spent</b> 13,000 13,600 6,400 7,000
<b>Reasons for Variation in performance</b>			
		<b>Total</b>	<b>40,000</b>
		Wage Recurrent	0
		Non Wage Recurrent	40,000
		Arrears	0
		AIA	0

### Budget Output: 04 Agricultural research capacity strengthened

4 fish laboratories and two aquarium facilities maintained and operationalised. 1 cage research facility maintained and operationalised. Premises and assets protected and	Three fish laboratory and two aquarium maintained & operationalized,  Fisheries research premises and assets at Kajansi and Jinja maintained protected/guarded	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221001 Advertising and Public Relations 221007 Books, Periodicals & Newspapers 221008 Computer supplies and Information Technology (IT) 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> 40,000 13,000 7,200 2,000 9,800 12,200 6,000 19,000 17,200 22,009 12,000 1,600 27,000 24,936 10,000 26,000 15,590
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### Reasons for Variation in performance

<b>Total</b>	<b>277,535</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	277,535
		Arrears	0
		AIA	0
		<b>Total For Department</b>	<b>317,535</b>
		Wage Recurrent	0
		Non Wage Recurrent	317,535
		Arrears	0
		AIA	0

### Departments

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

#### Outputs Provided

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

		Item	Spent
500 farmers exposed to salient tree-crop interactions different farming systems	300 farmers were exposed to selected tree seedlings for agroforestry around NaFORRI	221001 Advertising and Public Relations	3,000
250 Stakeholder equipped with best agronomic practices for production of quality avocado and annona germplasm	3 acres of agroforestry demo plots established and maintained	221007 Books, Periodicals & Newspapers	2,400
		221008 Computer supplies and Information Technology (IT)	5,000

### Reasons for Variation in performance

<b>Total</b>	<b>10,400</b>
Wage Recurrent	0
Non Wage Recurrent	10,400
Arrears	0
AIA	0

#### Budget 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
Institute capacity to support agricultural research and innovations enhanced through routine maintenance of vital research support components (infrastructure, equipment, machinery, vehicles, computers & ICT); re-tooling and guidance of staff	NAFORRI human resources and physical resources facilitated and maintained, fully functional. i.e. - Provision of Security/safety for Institute premises, assets & trials. - Refreshments to 69 staff members & 30 visitors. Institute capacity to support agricultural research and innovations enhanced through: - Routine maintenance of Office blocks, 1 conference Hall, 2 field vehicles 1 staff van, 1 generator, 1 water pump, 5 computers, 10,000 square meters of compound	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221003 Staff Training 221009 Welfare and Entertainment 221011 Printing, Stationery, Photocopying and Binding 222001 Telecommunications 222002 Postage and Courier 222003 Information and communications technology (ICT) 223004 Guard and Security services 223005 Electricity 224004 Cleaning and Sanitation 224005 Uniforms, Beddings and Protective Gear 227001 Travel inland 227004 Fuel, Lubricants and Oils 228001 Maintenance - Civil 228002 Maintenance - Vehicles 228003 Maintenance – Machinery, Equipment & Furniture	<b>Spent</b> 20,000 4,000 6,000 10,000 2,000 800 18,855 20,000 36,000 18,000 2,000 16,000 26,500 9,000 17,744 7,000

### Reasons for Variation in performance

<b>Total</b>	<b>213,899</b>
Wage Recurrent	0
Non Wage Recurrent	213,899
Arrears	0
AIA	0
<b>Total For Department</b>	<b>224,299</b>
Wage Recurrent	0
Non Wage Recurrent	224,299
Arrears	0
AIA	0

### Departments

**Department: 10 National Livestock Resources Research**

*Outputs Provided*

**Budget 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
One anti-tick candidate vaccine molecule validated in various agro-ecological zones of Uganda	One Anti-tick vaccine protocol was approved, 5000 trial doses were manufactured and the trial sites were established, evaluated and approved by NDA and UNCST. The trial sites are NABUIN ZARDI, Kiburara prisons farm, Mbarara ZARDI, Isimba prisons in Masindi farm and Maruzi in Apac .	<b>Item</b>	<b>Spent</b>
One broad-spectrum chimeric anti-tick vaccine formulated & evaluated		211103 Allowances (Inc. Casuals, Temporary)	172,612
Two FMD candidate vaccines evaluated. Four African swine fever candidate vaccine tests		221003 Staff Training	80,000
		221017 Subscriptions	21,603
		222003 Information and communications technology (ICT)	78,000
		223004 Guard and Security services	16,000
		223005 Electricity	144,739
		224001 Medical Supplies	337,000
		224004 Cleaning and Sanitation	37,316
		224005 Uniforms, Beddings and Protective Gear	30,780
		224006 Agricultural Supplies	329,950
		225001 Consultancy Services- Short term	50,000
		227001 Travel inland	92,000
		227004 Fuel, Lubricants and Oils	120,000
		228001 Maintenance - Civil	80,000
		228002 Maintenance - Vehicles	140,000
		228003 Maintenance – Machinery, Equipment & Furniture	157,000
	Towards development of two candidate FMD vaccines, an adjuvant was developed and is being evaluated for relative stability.		
	The adjuvant product is being evaluated against the Botswana and Kenyan type 2.		
	Towards development of four African swine fever candidate vaccines, the prevailing virus strains were identified and are being cultured.		
	Progress on FMD vaccine: 1) The P67 T. Parva gene for 15 ECF positive samples from Pader and 11 from Kiryandongo district has been amplified by PCR; 2) field workshops have been carried out in 11 districts and a total of 418 samples collected, out of which 155 screened microscopically showed positive and being evaluated by molecular means;		

### Reasons for Variation in performance

<b>Total</b>	<b>1,887,000</b>
Wage Recurrent	0
Non Wage Recurrent	1,887,000
Arrears	0
AIA	0

**Budget 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
3 livestock laboratories and one forage conservation facility maintained. Herbarium and two on-station field research facilities maintained. 10 research and production facilities maintained.	Physical resources (5 offices, 4 laboratories, 3 field machinery, office equipment) secured, maintained and fully functional	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221001 Advertising and Public Relations 221007 Books, Periodicals & Newspapers 221008 Computer supplies and Information Technology (IT) 221009 Welfare and Entertainment 221011 Printing, Stationery, Photocopying and Binding 221012 Small Office Equipment 222001 Telecommunications 223005 Electricity 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 273102 Incapacity, death benefits and funeral expenses	<b>Spent</b> 74,000 7,500 1,000 10,000 15,000 16,000 4,320 4,000 6,000 9,000 1,280 10,660 20,000 5,550 18,000 6,700 20,000

### Reasons for Variation in performance

<b>Total</b>	<b>229,010</b>
Wage Recurrent	0
Non Wage Recurrent	229,010
Arrears	0
AIA	0
<b>Total For Department</b>	<b>2,116,010</b>
Wage Recurrent	0
Non Wage Recurrent	2,116,010
Arrears	0
AIA	0

### Departments

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

#### Outputs Provided

#### Budget 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
15 sesame lines evaluated, 30 accessions of cowpea and 20 of pigeon pea characterized, one suitable soil & water conservation strategy generated & recommended for cotton production, Two farmer preferred cotton lines with industrial attributes identified f	5 lines of sesame were established under multi locational trials in Serere, Arua, Lira, Kitgum and Mayuge.  30 accessions of cowpeas were established on station  16 cotton lines constituting 7 varieties, 4 of them from Zimbabwe 3 Uganda, planted on station in NaSARRI towards developing a soil & water conservation strategy. In addition, 2farmer preferred cotton lines will be selected.	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 224006 Agricultural Supplies 227001 Travel inland 227004 Fuel, Lubricants and Oils	<b>Spent</b> 36,553 41,956 93,405 39,256

### Reasons for Variation in performance

<b>Total</b>	<b>211,170</b>
Wage Recurrent	0
Non Wage Recurrent	211,170
Arrears	0
<b>AIA</b>	<b>0</b>

### Budget Output: 04 Agricultural research capacity strengthened

1 Biopesticides developed and protocols produced 14 acres of compound mowed and 12 office blocks cleaned Four dissemination workshops conducted, 12 committee meetings held	Progress on bio-pesticide: Multilocation evaluation sites established in Kamuli, Kiboga and Luwero. 2. Data collection on the promising Neem K and Mertha1 prototypes ongoing.  14 acres of compound mowed and 3 office blocks maintained to create enabling environment for research One dissemination workshops conducted, 3 scientific committee meetings conducted to guide research.	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 213002 Incapacity, death benefits and funeral expenses 221001 Advertising and Public Relations 221007 Books, Periodicals & Newspapers 221008 Computer supplies and Information Technology (IT) 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 226001 Insurances 227001 Travel inland 227004 Fuel, Lubricants and Oils 228002 Maintenance - Vehicles	<b>Spent</b> 27,337 8,000 8,000 6,000 16,000 12,000 14,000 4,000 12,000 20,000 4,000 12,000 1,200 16,000 12,000 16,000
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### 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	US\$ Thousand
		<b>Total</b>	<b>188,537</b>
		Wage Recurrent	0
		Non Wage Recurrent	188,537
		Arrears	0
		AIA	0
		<b>Total For Department</b>	<b>399,707</b>
		Wage Recurrent	0
		Non Wage Recurrent	399,707
		Arrears	0
		AIA	0

### Departments

#### Department: 12 National Laboratories Research

#### Outputs Provided

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

		Item	Spent
3 Value added products from maize, beans, vegetables for commercialization developed. Propagation systems developed for two plant genetic resources, 2000 genotypes from banana Hybrid seed generated.	2 Value added products were developed for commercialization (Puffed extruded bean snack; composite extruded bean flour for porridge)	211103 Allowances (Inc. Casuals, Temporary)	72,634
		221009 Welfare and Entertainment	1,300
	2 propagation systems were developed for christmas berry ,(Psorospermum febrifugum) , a medicinal plant for treatment of skin diseases , (150 shoots) and sugar cane (280 plantlets)	221011 Printing, Stationery, Photocopying and Binding	5,700
		222001 Telecommunications	1,000
		223005 Electricity	15,534
		224004 Cleaning and Sanitation	1,500
		224006 Agricultural Supplies	204,483
	150 shoots of Psorospermum febrifugum maintained on multiplication media. 280 plantlets of sugarcane maintained in the screen house and fifty established in the field	227001 Travel inland	100,850
		227004 Fuel, Lubricants and Oils	9,286
		228002 Maintenance - Vehicles	1,200
		228003 Maintenance – Machinery, Equipment & Furniture	3,000

### Reasons for Variation in performance

	<b>Total</b>	<b>416,487</b>
	Wage Recurrent	0
	Non Wage Recurrent	416,487
	Arrears	0
	AIA	0

#### Budget 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
Agriculture Research Information Education Communication material developed and disseminated.	An assortment of Agriculture Research Information Education Communication material developed and disseminated during 2 exhibitions..	<b>Item</b>	<b>Spent</b>
		211103 Allowances (Inc. Casuals, Temporary)	16,000
		221011 Printing, Stationery, Photocopying and Binding	14,200
		224006 Agricultural Supplies	204,000
		227001 Travel inland	40,000

### Reasons for Variation in performance

<b>Total</b>	<b>274,200</b>
Wage Recurrent	0
Non Wage Recurrent	274,200
Arrears	0
AIA	0

### Budget Output: 04 Agricultural research capacity strengthened

'4 reaseach management committees conducted to guide research Procedure for application of procedures and polices Institution machinery and equipment maintained.	NARL research agenda strengthened with three research management committees conducted to guide research Institutional research machinery and equipment maintained	<b>Item</b>	<b>Spent</b>
		211103 Allowances (Inc. Casuals, Temporary)	89,940
		221001 Advertising and Public Relations	18,600
		221003 Staff Training	11,000
		221007 Books, Periodicals & Newspapers	4,800
		221008 Computer supplies and Information Technology (IT)	22,000
		221009 Welfare and Entertainment	18,785
		221011 Printing, Stationery, Photocopying and Binding	18,000
		221012 Small Office Equipment	5,000
		222001 Telecommunications	3,600
		222002 Postage and Courier	504
		223004 Guard and Security services	37,580
		223005 Electricity	45,600
		227001 Travel inland	47,500
		227004 Fuel, Lubricants and Oils	56,800
		228001 Maintenance - Civil	9,000
		228002 Maintenance - Vehicles	41,800
		228003 Maintenance – Machinery, Equipment & Furniture	11,497
		228004 Maintenance – Other	6,500

### Reasons for Variation in performance

Not all NARL Institution machinery and equipment was maintained due to insufficient funds.

**Total 448,506**

# 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
		Wage Recurrent	0
		Non Wage Recurrent	448,506
		Arrears	0
		AIA	0
		<b>Total For Department</b>	<b>1,139,193</b>
		Wage Recurrent	0
		Non Wage Recurrent	1,139,193
		Arrears	0
		AIA	0

### Departments

#### Department: 13 Abi ZARDI

#### Outputs Provided

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

	Item	Spent
Two technologies generated for increased production and productivity	221001 Advertising and Public Relations	12,000
Five innovations developed	221008 Computer supplies and Information Technology (IT)	8,000
One promising shrub & cattle manure combination identified ready for uptake	221011 Printing, Stationery, Photocopying and Binding	8,000
Apiary sites Established and maintained on station, Ten new top bar hives were procured and 5 old ones repaired, One acre of forage established and Maintained.		
Others technologies generated included:		
1) improved seed for rice, and soybean.		
2) 9.71 tons of foundation seed produced (rice-nerica 4-1708kg; soybean(maksoy 3N) 4700 kg;Maize (longe 5)-3300kgs).		
4) Cassava bread and cakes. cassava replacing wheat in bread and cakes.		
6) Cassava planting materials were developed and disseminated to farmers.		

### Reasons for Variation in performance

	<b>Total</b>	<b>28,000</b>
	Wage Recurrent	0
	Non Wage Recurrent	28,000
	Arrears	0
	AIA	0

#### Budget 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
Four advisory committee and PARI directors forum, institute committee meetings and two 02) review and planning meetings held to guide research activities	Zonal research agenda strengthened by three advisory committee and one PARI directors forum, institute committee meetings conducted.	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221008 Computer supplies and Information Technology (IT) 221011 Printing, Stationery, Photocopying and Binding 222001 Telecommunications 223004 Guard and Security services 223005 Electricity 223006 Water 224004 Cleaning and Sanitation 224006 Agricultural Supplies 226001 Insurances 227001 Travel inland 227004 Fuel, Lubricants and Oils 228001 Maintenance - Civil 228002 Maintenance - Vehicles	<b>Spent</b> 32,000 4,000 8,000 16,000 6,000 15,500 6,000 6,000 12,000 1,729 24,000 12,000 10,000 5,431

### Reasons for Variation in performance

<b>Total</b>	<b>158,660</b>
Wage Recurrent	0
Non Wage Recurrent	158,660
Arrears	0
AIA	0
<b>Total For Department</b>	<b>186,660</b>
Wage Recurrent	0
Non Wage Recurrent	186,660
Arrears	0
AIA	0

### Departments

**Department: 14 Bulindi ZARDI**

### Outputs Provided

**Budget 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	US\$ Thousand
Four technology dissemination Campaigns conducted in the zone	<p>10 technology dissemination Campaigns conducted (5 on station and 5 in 5 districts in the zone..</p> <p>1484 farmers, students and pupils skilled in improved agronomic, post-harvest and marketing practices.</p> <ul style="list-style-type: none"> <li>• Acquired foundation seed including beans (NAROBAN 1,2,3,4C,5C,6 and NABE 12C,15), rice (NAMCHE 1,3,5, SUPA and SUPA1052, and NERICA 1,4,10), soybeans (MAKSOY 3N, 6N), sweetpotato (NAROSPOT 1, NASPOT 8,13),</li> <li>• 5 demos fields for beans, maize, rice, soybean, sweetpotato were established and have been maintained in 3 acres in 2022A and</li> <li>• Harvested beans (NAROBAN 1,2,3, and NABE 15) and waiting for post harvest handling. soybean, sweet potato, maize and Rice are still growing but all climber beans planted (NAROBAN 4C, 5C, 6C &amp; NABE 12C) and supa rice varieties have been affected by sun shine therefore no yields are expected.</li> </ul> <p>5 dissemination workshops conducted (1 in Muhooro, Kagadi) and (1 in Chongoyoma, Masindi) on newly released NARO crop varieties (NAROBAN 1, 2 &amp; 3, NAROCAS 1, NASE 14 &amp; 19, MAKSOY 3N, NAROMILL 3, NERICA 4 and NAMCHE 5). Over 170 farmers were reached.</p> <p>Disseminated apiculture technologies, fruit seedlings, fruits, tree seedlings, fruit fly trapping technologies, piggery, cassava varieties &amp; cassava value addition to participants during belated women's day celebration in Kakumiro district.</p>	<p><b>Item</b></p> <p>224001 Medical Supplies</p> <p>224006 Agricultural Supplies</p>	<p><b>Spent</b></p> <p>4,000</p> <p>6,000</p>

### Reasons for Variation in performance

<b>Total</b>	<b>10,000</b>
Wage Recurrent	0
Non Wage Recurrent	10,000
Arrears	0
<i>AIA</i>	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>Budget Output: 04 Agricultural research capacity strengthened</b>			
Strategically focused research activities supported by 4 advisory meetings	- Research agenda strengthened holding four advisory committee	<b>Item</b>	<b>Spent</b>
8 technologies availed to farmers for Improved linkage between Bulindi ZARDI, and the communities.	- Bulindi ZARDI physical resources (offices, laboratories, field machinery, office equipment) secured, maintained and fully functional	211103 Allowances (Inc. Casuals, Temporary)	19,000
1 Annual report generated, disseminated and archived	- 812 farmers (youth, women and men) have been exposed to improved technologies during 2 farm clinics. - Institute reports (quarterly and annual) developed and submitted to NARO Secretariat	221001 Advertising and Public Relations	15,000
Equip the institution ICT		221007 Books, Periodicals & Newspapers	1,400
		221008 Computer supplies and Information Technology (IT)	20,000
		221009 Welfare and Entertainment	10,000
		221011 Printing, Stationery, Photocopying and Binding	10,000
		221012 Small Office Equipment	10,000
		223005 Electricity	30,000
		224001 Medical Supplies	4,000
		224006 Agricultural Supplies	5,046
		226001 Insurances	2,000
		227001 Travel inland	13,000
		227004 Fuel, Lubricants and Oils	14,915
		228002 Maintenance - Vehicles	25,000

### Reasons for Variation in performance

<b>Total</b>	<b>179,361</b>
Wage Recurrent	0
Non Wage Recurrent	179,361
Arrears	0
AIA	0
<b>Total For Department</b>	<b>189,361</b>
Wage Recurrent	0
Non Wage Recurrent	189,361
Arrears	0
AIA	0

### Departments

#### Department: 15 Kachwekano ZARDI

#### Outputs Provided

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

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

### *Reasons for Variation in performance*

<b>Total</b>	<b>44,800</b>
Wage Recurrent	0
Non Wage Recurrent	44,800
Arrears	0
<i>AIA</i>	0

### *Reasons for Variation in performance*

<b>Total</b>	<b>8,000</b>
Wage Recurrent	0
Non Wage Recurrent	8,000

# 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
		Arrears	0
		AIA	0

### Budget Output: 04 Agricultural research capacity strengthened

Enhancing institutional research capacity, safe through routine monitoring (4trips), safe guarding assets, servicing of computers (20times) and infrastructure vehicles( 7) machinery (4) maintenance .	Kachwekano ZARDI physical resources enhanced (offices, laboratories, field machinery, office equipment) secured, maintained and fully functional	<b>Item</b>	<b>Spent</b>
		211103 Allowances (Inc. Casuals, Temporary)	18,940
		221001 Advertising and Public Relations	4,000
		221007 Books, Periodicals & Newspapers	1,460
		221008 Computer supplies and Information Technology (IT)	7,140
		221009 Welfare and Entertainment	12,000
		221011 Printing, Stationery, Photocopying and Binding	6,000
		221012 Small Office Equipment	2,000
		222001 Telecommunications	1,600
		223005 Electricity	15,000
		223006 Water	5,000
		224004 Cleaning and Sanitation	18,000
		226001 Insurances	1,000
		227001 Travel inland	10,411
		227004 Fuel, Lubricants and Oils	15,000
		228002 Maintenance - Vehicles	12,000

### Reasons for Variation in performance

<b>Total</b>	<b>129,551</b>
Wage Recurrent	0
Non Wage Recurrent	129,551
Arrears	0
AIA	0
<b>Total For Department</b>	<b>182,351</b>
Wage Recurrent	0
Non Wage Recurrent	182,351
Arrears	0
AIA	0

### Departments

#### Department: 16 Mukono ZARDI

#### Outputs Provided

#### Budget 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
2 agronomic practices of indigenous tomato, onions and Bambara nuts cultivars established	Six accessions (Kito, NTW1, Pink MGL, Red MGL, Yellow MGJ, Red MGJ, NAKA1, KMG1) were sourced and	<b>Item</b>	<b>Spent</b>
1 effective weed management options for groundnuts production identified and packaged for	planted using the randomised complete block design (RCBD) but all these succumbed to bacterial wilt. A total of 26 more genotypes were sourced and a new trial with 30 indigenous tomato /cherry tomato accessions was set up. Three exotic cherry tomato varieties (Forteza RZ, Primrino RZ & one Korean variety) were included to make a total of 33 accessions. The trial was established using pots with sterilized soil to reduced the effect of the bacterial wilt. One data set on plant stand (survival) has been collected and at least 5 plants per genotype have been selected for the characterization data collection to start at flowering. Six indigenous onion accessions were sourced Sembabule, Mpigi, Kyegegwa, Apac, Lira and Gulu and used to establish an on-station trial at Ntawo. and 1 data collection tool developed; Data were carried out on the vegetative attributes (foliage colour, length, diameter); and total bulb weight. The Lira accession the tallest plants with an average plant height of 32.73 cm followed by Mpigi accession (31.52 cm), Gulu accession (31.4 cm), Kyegegwa (30.59 cm), Apac accession (29.67 cm) and Sembabule accession (29.44). Mpigi accession had the largest average number of leaves 34.1 leaves followed by Kyegegwa (24.9), Gulu (21.8), Apac (19.9), Lira (16.3) and (No Suggestions) (16.0). Lira had plants with the longest leaf length 30.0 cm followed by Gulu (27.17 cm), Apac (27.15 cm), Mpigi (25.85 cm), Kyegegwa (25.0 cm) and Sembabule (22.6 cm). Kyegegwa had the largest leaf girth of 5.64 mm followed by Mpigi (5.59 mm), Sembabule (3.22 mm), Lira (3.21 mm), Apac (2.44 mm), and Gulu (2.23 mm). The Mpigi accession yielded higher than other accessions with 6.7 kg per plot followed by (No Suggestions) (5.1 kg), Lira (4.8 kg), Gulu (4.0), Sembabule (3.6 kg) and Apac 2.7 Kg)	221011 Printing, Stationery, Photocopying and Binding	14,000
1 bio-pesticides and one fertilizer determined		222001 Telecommunications	5,000
1 effective weed management		223004 Guard and Security services	32,000
		223005 Electricity	50,000
		223006 Water	6,000
		224006 Agricultural Supplies	25,000
		227001 Travel inland	8,000
		227004 Fuel, Lubricants and Oils	30,000

*Reasons for Variation in performance*

**Total 170,000**

# 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
		Wage Recurrent	0
		Non Wage Recurrent	170,000
		Arrears	0
		AIA	0
<b>Budget Output: 02 Research extension interface promoted and strengthened</b>			
120 key market chain actors identified.	1 situational analysis study done for activities, interests and needs for piggery farmers done in Mukono district . 30	<b>Item</b>	<b>Spent</b>
4 potential market opportunities analyzed	piggery farmers interviewed in Ntawo and Kyampisi subcounties. One (1)Technical report written	211103 Allowances (Inc. Casuals, Temporary)	4,000
1000 stakeholders reached		224006 Agricultural Supplies	6,000
2 partnerships established			
4 potential market opportunities analyzed			
1000 stakeholders			
<b>Reasons for Variation in performance</b>			
		<b>Total</b>	<b>10,000</b>
		Wage Recurrent	0
		Non Wage Recurrent	10,000
		Arrears	0
		AIA	0
<b>Budget Output: 04 Agricultural research capacity strengthened</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	US\$ Thousand
Enhancement and maintained of ICT Infrastructure	3 coffee demos established in Lwengo and Bukomansimbi districts. 25 farmers trained in coffee GAPs. 13 Farmers engaged from Buddugala village, Mukono on African swine fever management and control. Participated in four (4) radio talkshows & 1 TV; Namirembe FM (Urban Farming), Radio Maria, Prime radio (seed Fair) CBS radio (climate smart farming) and Channel 44 TV (Hass avocado). Printed and disseminated 500 seed sachets, Showcased NARO technologies at BUKADEF exhibition, Masaka Seed Fair and Harvest money expo. Branded and shared online 3rd Newsletter. Printed 250 vegetable seed sachets for exhibitions. advertised KMG technologies for NTR using 20 spot messages aired on radio Buddu. Reached more than 600 stakeholders in all the above activities. One (1) community engagements with 60 piggery farmers in Kalungu and Lwengo (trained on ASF and proper piggery management), One (1) field day was held to share DOMINO project results with 100 stakeholders	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221001 Advertising and Public Relations 221003 Staff Training 221007 Books, Periodicals & Newspapers 221008 Computer supplies and Information Technology (IT) 221009 Welfare and Entertainment 221011 Printing, Stationery, Photocopying and Binding 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> 16,000 10,000 3,000 4,000 16,798 12,000 4,000 3,000 23,869 1,400 25,933 26,000 11,000 5,000 3,000
2 partnerships established			
1000 stakeholders reached and 2 partnerships established			
120 key market chain actors identified			
4 potential market opportunities analyzed			
4 M&E reports briefs s			
	Mukono ZARDI physical resources enhanced (offices, laboratories, field machinery, office equipment) secured, maintained and fully functional.		
	2 exploratory market studies conducted in Mukono and Wakios; 1 for piggery and 1 for tomato. One (1) Technical report written,		
	Four M\$E quarterly reports written and submitted.		
	1 situational analysis study done for activities, interests and needs for piggery farmers done in Mukono district . 30 piggery farmers interviewed in Ntawo and Kyampisi subcounties. One (1) Technical report written.		

### Reasons for Variation in performance

<b>Total</b>	<b>165,000</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	US\$ Thousand
		Non Wage Recurrent	165,000
		Arrears	0
		AIA	0
		<b>Total For Department</b>	<b>345,000</b>
		Wage Recurrent	0
		Non Wage Recurrent	345,000
		Arrears	0
		AIA	0

### Departments

#### Department: 17 Ngetta ZARDI

#### Outputs Provided

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

1 effective technique for estimating weed seed quantity and type in soil developed, 1 integrated approach for managing weeds in maize under CA systems developed 1 mango fruitfly IPM strategy developed 2 acres of at least four Indigenous fruit trees orcha	Two acres of at least four Indigenous fruit trees orchards maintained.	<b>Item</b>	<b>Spent</b>
		211103 Allowances (Inc. Casuals, Temporary)	12,093
	Four trainings in management of fruit flies in Alebtong, Omoro, Lira, and Gulu.	221001 Advertising and Public Relations	5,180
		221011 Printing, Stationery, Photocopying and Binding	305
	- Weed density of soils determined. Draft manuscript in place, to be submitted to reputable Journal for peer review.	222001 Telecommunications	1,720
		224001 Medical Supplies	6,268
		224006 Agricultural Supplies	22,703
		227001 Travel inland	20,392

#### Reasons for Variation in performance

	<b>Total</b>	<b>68,661</b>
	Wage Recurrent	0
	Non Wage Recurrent	68,661
	Arrears	0
	AIA	0

#### Budget 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	US\$ Thousand
4 technologies promoted with in the zone	4 improved NARO rice varieties multiplication and demonstration fields were prepared, maintained and promoted on station to different stakeholders.	<b>Item</b>	<b>Spent</b>
		221001 Advertising and Public Relations	1,999
		221008 Computer supplies and Information Technology (IT)	6,000
	8 varieties of groundnut (serenut 14, Naronut 1, Serenut 8, SGV0805, SGV 9904, Naronut2, Serenut 6, Serenut 7), 4 varieties of millet (Naromil1, Naromil3, Naromil4, Naromil5), 8 varieties of sorghum (Seso1, Seso 3, Narosog1, Narosog2, Narosog3, Narosog4) obtained from NASARRI, Serere were planted for onstation adaptation and multiplication. Data collection on growth parameters and pests and diseases is ongoing. Trial was maintained.	224006 Agricultural Supplies	14,911

### Reasons for Variation in performance

<b>Total</b>	<b>22,910</b>
Wage Recurrent	0
Non Wage Recurrent	22,910
Arrears	0
AIA	0

### Budget Output: 04 Agricultural research capacity strengthened

Institutional research infastructures maintained	Ngetta ZARDI physical resources (offices, laboratories, field machinery, office equipment) secured, maintained and fully functional.	<b>Item</b>	<b>Spent</b>
Research undertakings quidded through 4 research committees		211103 Allowances (Inc. Casuals, Temporary)	3,140
		221008 Computer supplies and Information Technology (IT)	10,200
	Zonal research agenda guided by facilitating the Advisory committee	221011 Printing, Stationery, Photocopying and Binding	5,000
		222001 Telecommunications	1,000
		223004 Guard and Security services	18,000
		223005 Electricity	6,860
		223006 Water	7,708
		224004 Cleaning and Sanitation	5,000
		227001 Travel inland	12,800
		227004 Fuel, Lubricants and Oils	16,000
		228002 Maintenance - Vehicles	16,000

### Reasons for Variation in performance

<b>Total</b>	<b>101,708</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	US\$ Thousand
		Non Wage Recurrent	101,708
		Arrears	0
		AIA	0
		<b>Total For Department</b>	<b>193,279</b>
		Wage Recurrent	0
		Non Wage Recurrent	193,279
		Arrears	0
		AIA	0

### Departments

#### Department: 18 Nabium ZARDI

#### Outputs Provided

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

		Item	Spent
1,000 kgs of better performing pasture seed (32 acres of planting material) species (Chloris gayana, Centrocema,	- Produced and disseminate 250 kgs of quality seed for demonstration.	211103 Allowances (Inc. Casuals, Temporary)	17,450
115 cattles; 30 Sahiwal and 15 friesian cattle crosses and 70 zebu cattle multiplied on-station to increase availability to farmers	- 115 cattle; 30 Sahiwal and 15 Friesian cattle crosses and 70 zebu cattle managed and monitored on-station to increase availability to farmers	221001 Advertising and Public Relations	652
		221008 Computer supplies and Information Technology (IT)	2,850
		221011 Printing, Stationery, Photocopying and Binding	1,300
		224001 Medical Supplies	6,950
		224006 Agricultural Supplies	18,750
		227001 Travel inland	10,652
		227004 Fuel, Lubricants and Oils	5,000
		228002 Maintenance - Vehicles	3,850

#### Reasons for Variation in performance

	<b>Total</b>	<b>67,454</b>
	Wage Recurrent	0
	Non Wage Recurrent	67,454
	Arrears	0
	AIA	0

#### Budget 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
Promotion and popularization of 4 selected crop, natural resources and animal value chain products and bi-products in NEAZ	NARO technologies exhibited during the Ist Eastern Agricultural Show 4th -6th March, 2022 at Awoja Riverside Farm Soroti. These included, soil testing kit demonstration,the soil fertility amendment material and packages available, apiary products and bi-products,pastures preservation technologies	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221001 Advertising and Public Relations 221003 Staff Training 221008 Computer supplies and Information Technology (IT) 221011 Printing, Stationery, Photocopying and Binding 224001 Medical Supplies 224006 Agricultural Supplies 227001 Travel inland 227004 Fuel, Lubricants and Oils 228002 Maintenance - Vehicles	<b>Spent</b> 2,100 600 400 600 600 1,500 2,500 1,200 600 800
<i>Reasons for Variation in performance</i>			
			<b>Total 10,900</b>
			Wage Recurrent 0
			Non Wage Recurrent 10,900
			Arrears 0
			AIA 0

**Budget 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
Local, regional, national and international cooperation on and access to science, technology, innovation and knowledge sharing enhanced.	- Participated one farm clinic to facilitate access to science, technology, innovation thru knowledge sharing.  - Nabuin ZARDI Physical resources (offices, laboratories, field machinery, office equipment) secured, maintained and fully functional.	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221001 Advertising and Public Relations 221007 Books, Periodicals & Newspapers 221009 Welfare and Entertainment 221011 Printing, Stationery, Photocopying and Binding 222002 Postage and Courier 223004 Guard and Security services 223005 Electricity 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> 16,000 1,600 1,000 3,000 4,000 648 6,920 4,524 4,312 1,271 765 6,000 20,000 8,000 20,000 8,000 1,600

### Reasons for Variation in performance

<b>Total</b>	<b>107,640</b>
Wage Recurrent	0
Non Wage Recurrent	107,640
Arrears	0
AIA	0
<b>Total For Department</b>	<b>185,994</b>
Wage Recurrent	0
Non Wage Recurrent	185,994
Arrears	0
AIA	0

### Departments

**Department: 19 Mbarara ZARDI**

### Outputs Provided

**Budget 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 Carbohydrate and cellulose digesting bacteria isolated 1 detailed research protocol developed. 1 research protocol developed and pretested in 5 farmer groups of 2 districts 1 appropriate formula of carbohydrate & cellulose digesting bacteria packaged &	1. One commercial carbohydrase and cellulose probiotics isolated and preserved as broth. 2. Two maize silage based diets (formulae) and one multivitamin block prototype incorporated with two carbohydrate and cellulose digesting probiotic bacterial strains produced. The two formulae and block pending optimisation through in vivo feeding trials; that is trials in animals.  One research protocol developed and pretested in 5 farmer groups of 2 district	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 223004 Guard and Security services 224001 Medical Supplies 224006 Agricultural Supplies 227001 Travel inland 227004 Fuel, Lubricants and Oils	<b>Spent</b> 18,300 1,000 15,000 20,300 13,500 7,500

### Reasons for Variation in performance

<b>Total</b>	<b>75,600</b>
Wage Recurrent	0
Non Wage Recurrent	75,600
Arrears	0
AIA	0

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

Sixteen research (16) technologies delivered to uptake pathways for increased production and productivity.	Energy saving, PAF free and small scale fish farmer friendly smoker prototype developed. 10kg of fish fingers and fish borne meal produced, evaluated . 10 dairy cattle(5 heifers and 5 young bulls) of improved genetics availed to farmers. The anti-microbial activity of five starter culture strains determined .	<b>Item</b> 222003 Information and communications technology (ICT) 224006 Agricultural Supplies	<b>Spent</b> 3,000 7,000
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### Reasons for Variation in performance

<b>Total</b>	<b>10,000</b>
Wage Recurrent	0
Non Wage Recurrent	10,000
Arrears	0
AIA	0

### Budget 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
Maintenance of institute IT infrastructures 15 institute research facilities maintained Assorted institute machinery maintained 4 rounds in the year	- Mbarara ZARDI physical resources (offices, laboratories, field machinery, office equipment) secured, maintained and fully functional 320 Experimental animals maintained.	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221001 Advertising and Public Relations 221008 Computer supplies and Information Technology (IT) 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 226001 Insurances 227001 Travel inland 227004 Fuel, Lubricants and Oils 228001 Maintenance - Civil 228002 Maintenance - Vehicles 228003 Maintenance – Machinery, Equipment & Furniture	<b>Spent</b> 8,000 3,290 5,000 6,000 8,000 2,000 12,000 8,000 4,000 8,000 1,210 12,000 10,000 3,000 11,759 3,000

### Reasons for Variation in performance

<b>Total</b>	<b>105,259</b>
Wage Recurrent	0
Non Wage Recurrent	105,259
Arrears	0
AIA	0
<b>Total For Department</b>	<b>190,859</b>
Wage Recurrent	0
Non Wage Recurrent	190,859
Arrears	0
AIA	0

### Departments

**Department: 20 Buginyaya ZARDI**

### Outputs Provided

**Budget 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
2 effective foundation seed systems for Orange Fleshed Sweet Potato validated & promoted for utilization of Vit A rich food in Busoga sub region 10 t of elite breeders seed for niche products of elite arabica coffee & brewing cassava varieties availed for	0.5 tons of seed harvested. Narobe 6 was the most most drought tolerant and high yielding (2.0t/ha).  All cassava varieties ready for planting. Variety UG120/15 most vigorous One acre of land prepared for sweetpotato multiplication (Narspot 8 and Narospot 1) at Ikulwe Application of Copper Nordox 75 soon after harvest reduces occurrence of Coffee Leaf Rust by 60% across sprayed fields 75000 seedlings in nursery ready for uptake in 2022B Two apple orchards and mother garden maintained at Buginyanya main station. Two hass avocado mother gardens maintained at Buginyanya main station Tree seedlings raised and maintained on the nursery for uptake by the different pathways Eucalyptus 11,846. Maesopsis emnii 263, Prunus africana  96,765 minitubers produced from EGS Unit	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221011 Printing, Stationery, Photocopying and Binding 224001 Medical Supplies 224006 Agricultural Supplies 227001 Travel inland 227004 Fuel, Lubricants and Oils 228002 Maintenance - Vehicles	<b>Spent</b> 13,034 966 6,982 37,433 22,211 10,171 1,484

### Reasons for Variation in performance

<b>Total</b>	<b>92,281</b>
Wage Recurrent	0
Non Wage Recurrent	92,281
Arrears	0
AIA	0

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

4 fish farmers supported in improved fish farming 6 niche products and accompanying productivity improvement identified Economic value from use of new coffee berry disease disease management options in Mt. Elgon	Five fish farmers and ten extension workers trained on fish farm management to Mbale fish fry center.	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221011 Printing, Stationery, Photocopying and Binding 224001 Medical Supplies 224006 Agricultural Supplies 227001 Travel inland 227004 Fuel, Lubricants and Oils	<b>Spent</b> 15,867 1,176 7,456 41,390 27,040 13,427
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### Reasons for Variation in performance

<b>Total</b>	<b>106,356</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	US\$ Thousand
		Non Wage Recurrent	106,356
		Arrears	0
		AIA	0

### Budget Output: 04 Agricultural research capacity strengthened

		Item	Spent
4agriculture technologies developed & disseminated,4agriculture technologies developed & disseminated for uptake,1 three sets of furniture and fittings acquired, Assorted ICT Infrastructure maintained and services provided for technology generation and	2 hybrid stakeholder engagement held (World food day and Seeds of Gold) 35 kgs and 25 kgs of Chloris gayana seed harvested for Nabugimbi Khyehutana women's group and Wanak farmers group respectively. Buginyanya ZARDI physical resources (offices, laboratories, field machinery, office equipment) secured, maintained and fully functional	211103 Allowances (Inc. Casuals, Temporary)	21,000
		221007 Books, Periodicals & Newspapers	3,000
		221009 Welfare and Entertainment	2,000
		221011 Printing, Stationery, Photocopying and Binding	7,000
		221012 Small Office Equipment	4,000
		222001 Telecommunications	8,000
		222003 Information and communications technology (ICT)	8,000
		223004 Guard and Security services	10,000
		223005 Electricity	6,000
		223006 Water	6,000
		224004 Cleaning and Sanitation	5,000
		226001 Insurances	2,000
		227001 Travel inland	10,000
		227004 Fuel, Lubricants and Oils	14,858
		228001 Maintenance - Civil	5,000
		228002 Maintenance - Vehicles	15,000
		228003 Maintenance – Machinery, Equipment & Furniture	5,000
		228004 Maintenance – Other	5,000
		273102 Incapacity,death benefits and funeral expenses	2,000

### Reasons for Variation in performance

<b>Total</b>	<b>138,858</b>
Wage Recurrent	0
Non Wage Recurrent	138,858
Arrears	0
AIA	0
<b>Total For Department</b>	<b>337,495</b>
Wage Recurrent	0
Non Wage Recurrent	337,495
Arrears	0
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>Departments</i>			
<b>Department: 21 Rwebitaba ZARDI</b>			
<i>Outputs Provided</i>			
<b>Budget Output: 01 Generation of agricultural technologies</b>			
1000 open pollinated seeds collected from selected	1) Maintain 30,000 tea seedlings of 10 elite tea clones in the nursery meant for agronomic management practices experiment.	<b>Item</b>	<b>Spent</b>
5 elite parents from the existing germplasm conserved identified		211103 Allowances (Inc. Casuals, Temporary)	56,200
40 tea clones characterized for biochemical attributes		221011 Printing, Stationery, Photocopying and Binding	20,100
10,000 clonal plantlets from at least 4 selected clones multiplied	2) Plotted & placed 10,000 tea cuttings of 10 tea clones in a humid chamber (Clone UTR 12/12 UTR 144/10, UTR 144/17, UTR 155/19, UTR 144/3, UTR 108/54, UTR 108/59; UTR 11/26, UTR 1/45, UTR 1/53)	224001 Medical Supplies	18,000
		224006 Agricultural Supplies	163,600
		227001 Travel inland	48,300
		228002 Maintenance - Vehicles	17,400
		228003 Maintenance – Machinery, Equipment & Furniture	8,000
<b>Reasons for Variation in performance</b>			
			<b>Total 331,600</b>
			Wage Recurrent 0
			Non Wage Recurrent 331,600
			Arrears 0
			AIA 0

### Budget 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
3 acres of early generation potato seed 7 tons and 1.5 tons of potato and bean foundation seed respectively harvested and availed to community seed systems/ local seed	2 acres of potato (NAROPOT 1 & NAROP 3 varieties), 2 acres of beans (NABE 16, NARO Bean 1 and NARO Bean 2) and 2 acres of maize (Bazooka, Longe 10H and WE 2114 varieties) demonstration fields planted and maintained on station 1 acre banana demonstration field established on farm being maintained and training in good agronomic practices ongoing Held 2 exposure visits for 18 LC1 Chairpersons of Rwengaju Model Village (17 male and 1 female) and 18 District councillors from Kasese (12 male and 6 female) to technologies being promoted. Followed up and trained 63 Group members in the five (5) groups in good agronomic practices and record keeping done with community seed systems (QDS for beans and potato)	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221011 Printing, Stationery, Photocopying and Binding 224006 Agricultural Supplies 227001 Travel inland	<b>Spent</b> 3,500 800 29,563 2,500

### Reasons for Variation in performance

<b>Total</b>	<b>36,363</b>
Wage Recurrent	0
Non Wage Recurrent	36,363
Arrears	0
<i>AIA</i>	0

**Budget 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
Two Advisory committee, two PARI director's forum meetings and and 12 institute committee meetings held to guide research activities The institute machinery and equipment maintained The institute research facilities maintained	Three advisory committee, one PARI director's forum meetings and and 12 institute committee meetings held to guide research activities.  - The institute machinery and equipment maintained The institute research facilities maintained and fully functional.	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 213002 Incapacity, death benefits and funeral expenses 221007 Books, Periodicals & Newspapers 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	<b>Spent</b> 18,000 2,016 2,400 4,800 6,000 3,000 4,400 4,800 12,000 8,800 3,000 530 18,000 11,000 3,000 3,000

### Reasons for Variation in performance

<b>Total</b>	<b>104,746</b>
Wage Recurrent	0
Non Wage Recurrent	104,746
Arrears	0
AIA	0
<b>Total For Department</b>	<b>472,709</b>
Wage Recurrent	0
Non Wage Recurrent	472,709
Arrears	0
AIA	0

### Departments

**Department: 26 NARO Internal Audit**

*Outputs Provided*

**Budget 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	US\$ Thousand
1 end of year annual Audit performance workshop conducted	1) 6 internal audit staff train in enterprise risk management with IIA	<b>Item</b>	<b>Spent</b>
Eight Audit reports developed: One Off budget project audit report	2) Hands on training, coaching of audit staff, review of reports and working papers at MuZARDI	221003 Staff Training	5,600
One audit report on assets utilization and safety, compliance with PPDA Act report	3) Special audits supported at ARDC-Kajjansi and at the reallocation to Maruzi plus inspection of experimental trial sites for the Anti - tick vaccine	227001 Travel inland	139,400
One ICT , Human Resource and CGS value	4) Two reports on advising on effective management of governance, social and enviromental aspects		
	5) Consultative risk management meetings at PARIs to indentify risks, mitigation controls and update of the risk register held		
	6) One report on comprehensive compliance risk assessment of financial and accountability processes produced		
	7) Human Resources Audit report produced.		
	8) On going Capital development audit report produced.		
	9) Audit report on Fleet Management and Utilities		
	10) Two CGS Projects/Value for Money Audit report produced.		
	11) Risk Register updated		

### Reasons for Variation in performance

<b>Total</b>	<b>145,000</b>
Wage Recurrent	0
Non Wage Recurrent	145,000
Arrears	0
<i>AIA</i>	0
<b>Total For Department</b>	<b>145,000</b>
Wage Recurrent	0
Non Wage Recurrent	145,000
Arrears	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

### Departments

#### Department: 27 National Coffee Research Institute

#### Outputs Provided

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

		Item	Spent
4 high value coffee & cocoa products prototypes developed	On station culinary tests conducted to start the cocoa wine validation process of the protocept developed..	211103 Allowances (Inc. Casuals, Temporary)	6,600
15 putative red blister resistant, 5 putative BCTB tolerant and 5 putative drought tolerant accessions collected cloned for phenotyping	On station culinary tests conducted to start the Chocolate protocepts validation process of the 2 protocepts developed..	221001 Advertising and Public Relations	3,000
20,000 TC-derived coffee plantlets produced & delivered.		221007 Books, Periodicals & Newspapers	5,500
Ide	Progress on BCTB:	221011 Printing, Stationery, Photocopying and Binding	320
	15 putative red blister resistant, 5 putative BCTB tolerant and 5 putative drought tolerant accessions collected cloned.	224006 Agricultural Supplies	13,260
	Phenotyping on-going.	225001 Consultancy Services- Short term	38,909
		227001 Travel inland	35,920
		227004 Fuel, Lubricants and Oils	11,800

#### Reasons for Variation in performance

<b>Total</b>	<b>115,309</b>
Wage Recurrent	0
Non Wage Recurrent	115,309
Arrears	0
AIA	0

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

		Item	Spent
Research and extension interface promoted and strengthened through maintenance of ITC infrastructure	4 farmer groups trained in cocoa PHH and 2 in coffee GAPs and PHH Met with Movit Products Ltd on possibility of commercializing coffee byproducts. MoU and licensing agreement for facial scrub underway • Met with Jesa Ltd on prospects of commercializing coffee-infused yoghurt. Product is being refined with commercially.	221008 Computer supplies and Information Technology (IT)	4,800
Promotion of better coffee varieties	available yoghurt stabilisers. 6 MSc students and 2 PhD students		

#### Reasons for Variation in performance

Contribution of off-budget projects.

<b>Total</b>	<b>4,800</b>
Wage Recurrent	0
Non Wage Recurrent	4,800
Arrears	0
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	US\$ Thousand
<b>Budget Output: 04 Agricultural research capacity strengthened</b>			
Research capacity strengthened through 4 (four) Advisory committee meetings, routine maintenance of research infrastructure, machinery and equipment, securing research activity sites and motivating staff notify more CWD pathogen specific primers from the	NACORI research capacity strengthened through 4 (four) Advisory committee meetings.  Human resources and physical resources (offices, laboratories, field machinery, office equipment) secured, maintained and fully functional - Two administrative, policy and all mandatory reports prepared and submitted. - Staff wages and security services sourced and paid during the quarter.	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221001 Advertising and Public Relations 227004 Fuel, Lubricants and Oils	<b>Spent</b> 22,000 5,000 94,000

### Reasons for Variation in performance

<b>Total</b>	<b>121,000</b>
Wage Recurrent	0
Non Wage Recurrent	121,000
Arrears	0
AIA	0
<b>Total For Department</b>	<b>241,109</b>
Wage Recurrent	0
Non Wage Recurrent	241,109
Arrears	0
AIA	0

### Development Projects

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

##### Outputs Provided

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

60 elite calves produced to constitute the elite research and embryo production herd at NaLIRRI 2000 tons of silage and hay produced	A total of 39 calves were (21 males and 18 Females) produced to constitute the elite research and embryo production herd at NaLIRRI	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 224001 Medical Supplies 224006 Agricultural Supplies 227001 Travel inland 227004 Fuel, Lubricants and Oils 228002 Maintenance - Vehicles 228003 Maintenance – Machinery, Equipment & Furniture	<b>Spent</b> 120,000 200,000 310,000 60,000 100,000 60,000 200,000
200 tons of grain soya, maize and sunflower produced MT tons of f	2000 tons of silage and hay produced 200 tons of grain soya, maize and sunflower produced MT tons for dry season feeding		

### 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>1,050,000</b>
		GoU Development	1,050,000
		External Financing	0
		Arrears	0
		AIA	0

### Capital Purchases

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

	Item	Spent
1 office block with a store renovated at Nakyesasa.	A) civil works progress at 100%;	
10 km of road network to ease access to research facilities developed at Maruzi.	1) Project: Construction of Assorted Infrastructure at Maruzi;	312101 Non-Residential Buildings 2,299,454
One administration block constructed at Maruzi.	a) Hay barn at Nakyesasa complete, waterborne toilet completed;	312102 Residential Buildings 1,200,546
1 hay barn constructed at Nakyesasa	c) Container Residential units at maruzi;	312104 Other Structures 450,000
500 meter tarmack road constructed	d) Hay barn at Maruzi;	
	e) Construction of Maruzi Access Road-8KM, 99% complete;	
	f) Construction/ Extension of power line & Reticulation to the Maruzi Farm-Apac;	
	g) Construction of Residential staff blocks at Maruzi	
	B) Civil works with progress at various levels	
	2) Vaccine production facility 65%	
	4) Project: Construction of Assorted Infrastructure at Maruzi	
	a) Residential container units 75% complete;	
	b) Paddocking at 52% (14 fully done, 12 not complete), cattle dip at 80% and water reticulation at 75%;	
	c) Renovation of Hostel, Lab & Office Blocks, 45%;	
	d) Construction of Calf/Heifer Barn, 52%;	
	e) Water extension project to Maruzi, 24%	
	f) Extra works at Maruzi-Assorted works, 90%;	

### Reasons for Variation in performance

Procurement processes concluded but not signed due to limited funds.

a) Construction of a Main Admin Block at Maruzi;

b) Construction of a Grain Store and Hay Barn

<b>Total</b>	<b>3,950,000</b>
GoU Development	3,950,000
External Financing	0
Arrears	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
		AIA	0
		Total For Project	5,000,000
		GoU Development	5,000,000
		External Financing	0
		Arrears	0
		AIA	0

Development Projects

Project: 1619 Retooling of National Agricultural Research Organization

Outputs Provided

Budget 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
50 technologies generated, 20 innovations developed to support improved production and productivity for accelerated agro Industrialization.	Thru CGS support was given development of 50 technologies which include: Achievements under CGS 1. Tomato production manue developed as guide for tomato farmers in Uganda 2.Variety submission report drafted under review 3. Water use of 3litres/day/bucket recommended for green house tomato production 4. Spiced tomato Ketch-up developed and validated 5. Tomato production manue developed as guide for tomato farmers in Uganda 6. 4 blocks (48 acres) of old citrus orchard managed and maintained through pruning, bush clearing, fertilizer application and routing spraying to increase fruit quality. 7. One thousand five hundred (1,500) 100ml Nile perch oil bottels packaged; 8. 2 suitable types of wastewater growth media identified; ii) Protocols for optimal propagation the pure species determined. 10. Algae technologies documented, v) Capacity building on culture of algae, bioremediation and value addition strengthened, 11. Species X were maintained in the lab; Protocol for algae oil generation was optimised. 12. Draft protocols of pollutant removal by species tested and documented. 13. Profiling of the various nutrient media and environmental characterization of algae from the source conducted. 14. Protocol for algae oil generation was optimized. 15. Aronutro instant maize snack brands are being developed and Information on quality, physico-chemical properties and nutrients of AroNutro Instant Maize snack prototypes, desired consumer preferences determine. Partial information on colour, texture, protein, zinc, Iron, and pro-vitamin A was acquired. 16. 2-acre of Essential oils as input for AroNutro instant maize flour are being readied for Aronutro instant maize snack brands.	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221001 Advertising and Public Relations 221002 Workshops and Seminars 221003 Staff Training 221006 Commissions and related charges 221008 Computer supplies and Information Technology (IT) 221011 Printing, Stationery, Photocopying and Binding 222001 Telecommunications 222003 Information and communications technology (ICT) 223005 Electricity 223006 Water 224001 Medical Supplies 224005 Uniforms, Beddings and Protective Gear 224006 Agricultural Supplies 225001 Consultancy Services- Short term 227001 Travel inland 227004 Fuel, Lubricants and Oils 228002 Maintenance - Vehicles 228003 Maintenance – Machinery, Equipment & Furniture	<b>Spent</b> 1,475,823 185,070 200,000 102,520 590 55,535 100,864 2,000 388,800 32,000 3,500 676,282 2,500 4,860,806 309,250 2,233,377 233,467 32,302 17,399

### Reasons for Variation in performance

Limited space to report all the CGS achievements.



# 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	<i>UShs Thousand</i>
		<b>Total</b>	<b>10,912,085</b>
		GoU Development	10,912,085
		External Financing	0
		Arrears	0
		AIA	0

**Budget 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	US\$ Thousand
Eight technology promotion interfaces conducted	<p>1. NARO is delivering technological innovations to uptake pathways by operationalizing the domino effect model. This is to enhance technology adoption and increase awareness of the relevance of participating PARIs and their research outputs in the zones. 4 horticultural demos were to be established in the 4 participating ZARDIs, where one demo at the Institute and at least 3 in 3 communities around the ZARDI.</p> <p>a. At Bulindi ZARDI, there is a demo at the Institute; at Ntakaganagaho Juma in Kisiramu Kibaire; at Bigirwa Joseph in Kakitara.</p> <p>b. At Mukono ZARDI, there is a demo at the Institute; and in Mungwe Farmers' group (35 members) hosted by Ms Annet Namaganda in Mpungwe village, Kikandwa Parish, Kakiri Sub-county, Wakiso District.</p> <p>c. At Ngetta ZARDI, there two demos at the Institute (at the irrigation site and also along the Road – manually irrigated using water in a plastic tank); also on farm in the Olwenyi farmers' group (30 members). For both sites the seedlings planting was completed by Mid February 2022.</p> <p>d. At Abi ZARDI, there is one demo in the irrigation area; also in Egara East Village, Manibe Sub-county, Ombokoro Parish Arua District. The demos were planted by mid February</p> <p>e. 3 district councils visited the demos on the station; • Intern students were able to learn from these demos;</p> <p>f. Open days and feedback sessions were held in BuZARDI, MuZARDI, NgeZARDI and AbiZARDI.</p> <p>2). Four radio talk shows held in Karamoja on Brucellosis.</p> <p>3) Two technology promotion clinics conducted.</p> <p>4) Two automated technology promotion tools developed.</p> <p>5) 10 seed company engaged in partnerships for technology multiplication and promotion.</p>	<b>Item</b>	<b>Spent</b>
Eight automated technology promotion tools developed		211103 Allowances (Inc. Casuals, Temporary)	301,466
109 technological innovations delivered to uptake pathways		221001 Advertising and Public Relations	471,640
20 partnerships developed for technology multiplication and promotion		221002 Workshops and Seminars	261,000
		221003 Staff Training	43,953
		221007 Books, Periodicals & Newspapers	7,500
		221008 Computer supplies and Information Technology (IT)	42,226
		221011 Printing, Stationery, Photocopying and Binding	67,244
		222001 Telecommunications	1,000
		222003 Information and communications technology (ICT)	338,650
		224001 Medical Supplies	34,533
		224006 Agricultural Supplies	429,496
		227001 Travel inland	794,869
		227004 Fuel, Lubricants and Oils	24,480
		228001 Maintenance - Civil	254,855
		228002 Maintenance - Vehicles	7,138
		228003 Maintenance – Machinery, Equipment & Furniture	2,088

### Reasons for Variation in performance

<b>Total</b>	<b>3,082,138</b>
GoU Development	3,082,138

# 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
		External Financing	0
		Arrears	0
		AIA	0

### Budget Output: 04 Agricultural research capacity strengthened

		Item	Spent
16 research institutes research infrastructure maintained	1) Fencing of part of Kigumba land in Kiryandongo District at 50% completion..	211103 Allowances (Inc. Casuals, Temporary)	80,413
Four institute laboratories supported for accreditation	2) Construction, Extension of Power-line and reticulation to the Maruzi Farm, 95% completion . 3) Upgrading the Irrigation Water System, 50% completion. 4) Establishment of a Incubation Hub at Mukono ZARDI, 99% completion. . 5) Construction of a Screen House at NaFORRI, 99% completion. 6) Construcion of a Road Network at Nalirri, 60% completion	221001 Advertising and Public Relations	2,000
16 laboratory equipment maintained/serviced		221003 Staff Training	612,000
NARO wide training plan 2021_22 developed		221004 Recruitment Expenses	90,000
49 staff recruited to strengthen research Capacity		221006 Commissions and related charges	1,420
		221007 Books, Periodicals & Newspapers	8,000
		221008 Computer supplies and Information Technology (IT)	1,329,000
		221009 Welfare and Entertainment	84,505
		221011 Printing, Stationery, Photocopying and Binding	151,951
		221012 Small Office Equipment	5,667
		221016 IFMS Recurrent costs	90,000
		221017 Subscriptions	45,274
		222003 Information and communications technology (ICT)	72,500
		223002 Rates	50,000
		223005 Electricity	4,000
		223006 Water	20,000
		224004 Cleaning and Sanitation	1,200
		224006 Agricultural Supplies	95,000
		225001 Consultancy Services- Short term	258,920
		226002 Licenses	168,000
		227001 Travel inland	719,648
		227004 Fuel, Lubricants and Oils	189,161
		228001 Maintenance - Civil	123,640
		228002 Maintenance - Vehicles	64,598
		228003 Maintenance – Machinery, Equipment & Furniture	18,900
		228004 Maintenance – Other	6,860

### Reasons for Variation in performance

Due to insufficient funds. the following was not undertaken:

- 1) Laboratory equipment not maintained/serviced
- 2) One institute laboratory supported for accreditation
- 3) NARO wide training plan 2021\_22 not developed due to insufficient funds.

**Total 4,292,657**

# 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
		GoU Development	4,292,657
		External Financing	0
		Arrears	0
		AIA	0

### Outputs Funded

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

Quarterly Compliance to 6 international organizations (CGIAR, ASEREC, FARA, CABI WADRA and BeCA) and autonomous institutions strengthened.	Quarterly compliance to 6 international organizations (CGIAR, ASEREC, FARA, CABI WADRA and BeCA) and autonomous institutions strengthened.	Item	Spent
		262201 Contributions to International Organisations (Capital)	1,800,000
		264101 Contributions to Autonomous Institutions	44,000

### Reasons for Variation in performance

<b>Total</b>	<b>1,844,000</b>
GoU Development	1,844,000
External Financing	0
Arrears	0
AIA	0

### Capital Purchases

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

7 agricultural research facilities established across four public research Institutes of NaCCORI, NARL, NaLIRRI, Rwebitaba, for efficient delivery of research services to accelerate Agro Industrialization, 2 irrigation facilities NaCRRI & Kigumba	A) civil works progress at 100%; 1) Multipurpose Laboratory at NaCORI; 2) Aquatic Diagnostic Laboratory-Kajjansi; 3) Construction of Screen House at NaFoRRI; 4) Rehabilitation & Remodeling of NARO Incubation centre at Mukono ZARDI, Ntawo campus; 5) Renovation and Remodeling of Bugusege-Guest House into Residential House (NaCORI).  B) Civil works with progress at various levels 1) Aflasafe plant 80% 2) Construction of Administration block at NARL-Namalere (AEATREC) - 60% 3) NARO Sec Offices, Entebbe a) Construction of Reception at Gate, b) Renovation of Naro Village, Canteen Toilets & Kitchen at 30%.	Item	Spent
		281504 Monitoring, Supervision & Appraisal of Capital work	1,400,000
		312101 Non-Residential Buildings	18,107,785
		312102 Residential Buildings	693,457
		312104 Other Structures	914,345

### Reasons for Variation in performance

<b>Total</b>	<b>21,115,587</b>
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# 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
		GoU Development	21,115,587
		External Financing	0
		Arrears	0
		AIA	0

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

	Item	Spent
Five (5) Agricultural intelligence tools acquired	1) Three digital research platforms developed One on NARO knowledge products developed for technology dissemination One on value chain, digital online plat form developed. - Concept not on NARO big data was developed and ready for management approval.	312213 ICT Equipment
Agricultural Research Big data center developed		113,500
Ten (10) digital research platforms developed		
Six (6) NARO knowledge products developed for technology dissemination		
Five (5) value chain, digital online		

### Reasons for Variation in performance

<b>Total</b>	<b>113,500</b>
GoU Development	113,500
External Financing	0
Arrears	0
AIA	0

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

	Item	Spent
Laboratory equipment for 5 research facilities acquired; Rwebitaba tea research, invitro and embryo transfer, Incubation facility at Mukono, fisheries research at Kajansi & research workshop at NASARRI	1) One Incubation facility equipment acquired and installed at Mukono ZARDI at 70% completion.	312202 Machinery and Equipment
	2)Laboratory equipment for one laboratory for invitro and embryo transfer acquired and installed at NaLIRRI Nakyesasa.	312214 Laboratory Equipments
	3) One workshop at NASARRI equipped to enhance innovation.	
	4) Fisheries research laboratory at Kajansi , at 100% completion.	

### Reasons for Variation in performance

<b>Total</b>	<b>3,765,389</b>
GoU Development	3,765,389
External Financing	0
Arrears	0
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	US\$ Thousand
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### Budget Output: 78 Purchase of Office and Residential Furniture and Fittings

Four agriculture research facilities at NaLIRRI, Rwebitaba, NaCORI and NaFIRI furnished

One agriculture research facility at NaCORRI furnished at 90% to create enabling environment for Cocoa and coffee.

#### Item

312203 Furniture & Fixtures

#### Spent

200,500

### Reasons for Variation in performance

	<b>Total</b>	<b>200,500</b>
GoU Development		200,500
External Financing		0
Arrears		0
AIA		0
<b>Total For Project</b>		<b>45,325,856</b>
GoU Development		45,325,856
External Financing		0
Arrears		0
AIA		0
<b>GRAND TOTAL</b>		<b>108,790,999</b>
Wage Recurrent		34,233,229
Non Wage Recurrent		24,231,914
GoU Development		50,325,856
External Financing		0
Arrears		297,926
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
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### Sub-SubProgramme: 51 Agricultural Research

#### Departments

#### Department: 01 Headquarters

#### Outputs Provided

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

1 Annual performance review conducted, 1 Statistical abstract FY2021/22 developed one physical and budget performance monitoring reports generated to inform management decisions.	Two impact studies of NARO improved agricultural technologies on livelihoods of farmers were undertaken. The study on beans and maize revealed that 79% and 60% of farmers were using improved NARO maize and beans varieties, respectively. Beans and maize were reported to contribute 48% (UGX 2.08M) and 36% (UGX 1.65M) of the total household incomes. The results further revealed that households that adopt NARO technologies are 76% food secure compared to the non-adopters at 63%. Findings indicate that the beans and maize contributed 43% and 53% female and male calorific energy intake levels respectively. The estimated national benefits of adopting improved maize technologies were USD 22M, 45M and 65M at adoption rates of 25%, 50% and 75% respectively. For beans, this stood at USD 4M, 8M, and 13M. The difference is largely due to larger areas under technology for maize technologies and a higher adoption rate. The second study on rice and sorghum was initiated, where data collection tools were finalized and await data collection indicating a 20% performance level. NARO conducted and concluded 40 studies under competitive Grants Scheme (CGS). These have run for the past 4 years. The generated information, knowledge, technological packages and products are undergoing final assessment and quality assurance for dissemination. One physical and budget performance monitoring reports were generated and utilized for decision making at various levels. One NARO statistical abstract FY2021/22 was developed to support agricultural research and policy development.	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221006 Commissions and related charges 227001 Travel inland	<b>Spent</b> 4,373 46,020 85,000
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#### 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>135,393</b>
		Wage Recurrent	0
		Non Wage Recurrent	135,393
		<i>AIA</i>	0

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

		Item	Spent
One web-based technology promotion System developed	Three (3) web-based technology promotion Systems were developed. These include botanical community seed bank system, Intellectual property, incubation and commercialization system,	221007 Books, Periodicals & Newspapers	3,843
Two identified technologies protected,	Two trademarks on NACOFÉ, and Fish oil extraction and one patent on NANO film on food preservation developed for intellectual property, commercialization, to avoid piracy and increased revenue to support research.	221011 Printing, Stationery, Photocopying and Binding	50,000
Three Intellectual Property management committee (IPMC) engagements coordinated	2 Intellectual property management committee MC engagements on KAZIRE (resistant banana starch) and MOVIT (beauty products from coffee) partnerships. One series of engagement with Competitive Grant Scheme. One engagement with NARO holdings for production and supply of Early generation seed to seed companies for sustainable supply of quality planting materials and seed to farmers.	221012 Small Office Equipment	3,770
Three IP awareness policy coordinated, 8 Technology licensing agreements signed		222001 Telecommunications	83,830
Two Business plans and proposals developed and 3 digital based technology promotions conducted		222002 Postage and Courier	4,840
		223005 Electricity	26,175
		223006 Water	10,104
		227001 Travel inland	15,780
	One digital based technology platforms records management system for outreach was developed.		

### Reasons for Variation in performance

	<b>Total</b>	<b>198,342</b>
	Wage Recurrent	0
	Non Wage Recurrent	198,342
	<i>AIA</i>	0

### Budget 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
10 NARO staff supported for MScs and PhDs, 1000 acres of NARO secured through titling, Quarterly Compliance to 6 international organizations (CGIAR, ASEREC, FARA, CABI WADRA and BeCA) strengthened, Coordinated Research oversight in the 16 PARIs strengthened to support development of research for products to stimulate industries, Security enhanced in the 16 NARO PARIs, 1 routine facilities maintenance conducted in the 16 Public research institutes	10 NARO staff competencies enhanced through long term and short term training. (01 PHD, 01 MSC, 8short term )  500 acres of NARO titled, strengthened compliance to 4 international organizations, ASARECA, AFRICA-RICE, PGRI/Bioversity International, CABI. 10 supervisory meetings undertaken by top management across PARIs  PARIs assets and facilities such as office buildings, vehicles, compounds and utilities secured, functional and managed effectively and efficiently in 16 PARIs. Financial resources managed, and monitored the fiduciary responsibilities of the various actors in the 16 PARIs.	<b>Item</b> 211102 Contract Staff Salaries 211103 Allowances (Inc. Casuals, Temporary) 212101 Social Security Contributions 213001 Medical expenses (To employees) 213002 Incapacity, death benefits and funeral expenses 213004 Gratuity Expenses 221001 Advertising and Public Relations 221006 Commissions and related charges 221008 Computer supplies and Information Technology (IT) 221009 Welfare and Entertainment 221011 Printing, Stationery, Photocopying and Binding 221016 IFMS Recurrent costs 222001 Telecommunications 222003 Information and communications technology (ICT) 223004 Guard and Security services 223005 Electricity 224001 Medical Supplies 224004 Cleaning and Sanitation 224006 Agricultural Supplies 226001 Insurances 226002 Licenses 227001 Travel inland 227004 Fuel, Lubricants and Oils 228001 Maintenance - Civil 228002 Maintenance - Vehicles 228003 Maintenance – Machinery, Equipment & Furniture 228004 Maintenance – Other 273102 Incapacity,death benefits and funeral expenses	<b>Spent</b> 8,558,307 152 855,831 169,373 322,000 2,139,577 1,537 2,672 1,325 102,644 1,027 92,840 56 7,839 9,641 40 4,797 2,444 251,485 110,000 20,000 138,447 117,489 29,277 40,407 24,124 13,805 51,700

### Reasons for Variation in performance

<b>Total</b>	<b>13,068,834</b>
Wage Recurrent	8,558,307
Non Wage Recurrent	4,510,527
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
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### Arrears

<b>Total For Department</b>	<b>13,402,569</b>
Wage Recurrent	8,558,307
Non Wage Recurrent	4,844,262
AIA	0

### Departments

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

##### Outputs Provided

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

Four technologies for food and nutrition security developed and submitted to the varieties release committee. The varieties have capacity to fight hidden hunger, improve production and productivity and also increase competitiveness agricultural products on mark.

Additional field data from NPT and DUS trials being collected to improve the Root crops application for release of the 6 varieties (3 cassava and 3 sweet potato varieties). Process of re-submission of the application is in progress

Item	Spent
211103 Allowances (Inc. Casuals, Temporary)	19,373

##### Reasons for Variation in performance

<b>Total</b>	<b>19,373</b>
Wage Recurrent	0
Non Wage Recurrent	19,373
AIA	0

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

Four technologies delivered to uptake path ways for increased production and productivity and accelerated agro industrialization, food security and employment creation.

Three bean platforms (EADCL, CEDO and Nutreal) supported.

7 varietal technologies delivered to uptake pathways using 4 demonstration fields,. Also 2 weed management technologies and GAP; a composite nutritious porridge for children under five years promoted in Mayuge and Karamoja

Item	Spent
221001 Advertising and Public Relations	1,480

##### Reasons for Variation in performance

<b>Total</b>	<b>1,480</b>
Wage Recurrent	0
Non Wage Recurrent	1,480
AIA	0

##### Budget 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) Four on-station field research facilities maintained.	One bio-sciences laboratories at Namulonge maintained.	<b>Item</b>	<b>Spent</b>
2. Two Crop production facilities maintained to create enabling environment for Agriculture research.	Kiige station field research facilities maintained	211103 Allowances (Inc. Casuals, Temporary)	1,480
		221008 Computer supplies and Information Technology (IT)	1,368
		221009 Welfare and Entertainment	1,960
		221011 Printing, Stationery, Photocopying and Binding	3,700
		222001 Telecommunications	2,960
		223004 Guard and Security services	4,440
		223005 Electricity	14,800
		224004 Cleaning and Sanitation	2,960
		226001 Insurances	474
		227001 Travel inland	5,365
		227004 Fuel, Lubricants and Oils	11,100
		228002 Maintenance - Vehicles	11,840
		228003 Maintenance – Machinery, Equipment & Furniture	2,220

### Reasons for Variation in performance

<b>Total</b>	<b>64,667</b>
Wage Recurrent	0
Non Wage Recurrent	64,667
AIA	0
<b>Total For Department</b>	<b>85,520</b>
Wage Recurrent	0
Non Wage Recurrent	85,520
AIA	0

### Departments

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

#### Outputs Provided

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

4,125 brood stock of fisheries resources acquired for sustainable seed production and Breeding that is; Two thousand five hundred (2500) Tilapia, Five thousand (1,000) catfish, One thousand (250) mirror carp and Five hundred (500) Barbus.	5000 brood stock of fisheries resources acquired for sustainable seed production and Breeding. 2500 tilapia, and 2,500 catfish.	<b>Item</b>	<b>Spent</b>
		211103 Allowances (Inc. Casuals, Temporary)	4,687
		224006 Agricultural Supplies	3,903
		227001 Travel inland	1,558
		227004 Fuel, Lubricants and Oils	2,524

### Reasons for Variation in performance

<b>Total</b>	<b>12,671</b>
Wage Recurrent	0
Non Wage Recurrent	12,671

# 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
		AIA	0
<b>Budget Output: 02 Research extension interface promoted and strengthened</b>			
Strengthened capacity and creating an enabling environment for fish breeding and handling for ponds and 3 office blocks cleaned.	Two breeding ponds maintained	<b>Item</b>	<b>Spent</b>
Strengthened Stakeholders awareness in aquaculture.	Strengthened Stakeholders awareness in aquaculture.		
<i>Reasons for Variation in performance</i>			
		<b>Total</b>	<b>0</b>
		Wage Recurrent	0
		Non Wage Recurrent	0
		AIA	0
<b>Budget Output: 04 Agricultural research capacity strengthened</b>			
1 fish laboratory and one aquarium maintained & operationalized, Fisheries Premises and assets protected/guarded for improved safety	Two fish laboratory and two aquarium maintained & operationalized, Fisheries research premises and assets at Kajansi and Jinja maintained protected/guarded	<b>Item</b>	<b>Spent</b>
		211103 Allowances (Inc. Casuals, Temporary)	13,761
		221001 Advertising and Public Relations	4,476
		221007 Books, Periodicals & Newspapers	2,491
		221008 Computer supplies and Information Technology (IT)	673
		221009 Welfare and Entertainment	3,395
		221011 Printing, Stationery, Photocopying and Binding	4,222
		222001 Telecommunications	2,116
		222003 Information and communications technology (ICT)	6,563
		223004 Guard and Security services	5,914
		223005 Electricity	6,564
		223006 Water	4,088
		224004 Cleaning and Sanitation	4,040
		226001 Insurances	544
		227001 Travel inland	6,073
		227004 Fuel, Lubricants and Oils	8,598
		228001 Maintenance - Civil	3,367
		228002 Maintenance - Vehicles	5,896
		228003 Maintenance – Machinery, Equipment & Furniture	5,320
<i>Reasons for Variation in performance</i>			
		<b>Total</b>	<b>88,097</b>
		Wage Recurrent	0
		Non Wage Recurrent	88,097

# 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
		AIA	0
		<b>Total For Department</b>	<b>100,768</b>
		Wage Recurrent	0
		Non Wage Recurrent	100,768
		AIA	0

### Departments

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

#### Outputs Provided

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

	Item	Spent
1 prototypes of energy saving stove that can efficiently utilise charcoal dust as fuel developed to curb pressure on forestry resouces,	Second prototype of energy saving stove produced and lab tested.	
One type of value added wood and non-wood product developed	Five value added non-wood products (Tables, Chairs, Cups, Trays, Chopping boards) produced from Dendrocalamus giganteus and Bambusa vulgaris. One value added wood product produced from wood waste using glulam technology.	

#### Reasons for Variation in performance

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

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

	Item	Spent
50 farmers exposed to salient tree-crop interactions different farming systems	300 farmers were exposed to selected tree seedlings for agroforestry around NaFORRI	
50 Stakeholder equipped with best agronomic practices for production of quality avocado and annona germplasm	3 acres of agroforestry demo plots established and maintained	
	221001 Advertising and Public Relations	1,084
	221007 Books, Periodicals & Newspapers	867
	221008 Computer supplies and Information Technology (IT)	1,807

#### Reasons for Variation in performance

<b>Total</b>	<b>3,758</b>
Wage Recurrent	0
Non Wage Recurrent	3,758
AIA	0

##### Budget 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
Institute capacity to support agricultural research and innovations enhanced through routine maintenance of vital research support components (infrastructure, equipment, machinery, vehicles, computers & ICT); re-tooling and guidance of staff	NAFORRI human resources and physical resources facilitated and maintained, fully functional. i.e. - Provision of Security/safety for Institute premises, assets & trials. - Refreshments to 69 staff members & 30 visitors. Institute capacity to support agricultural research and innovations enhanced through: - Routine maintenance of Office blocks, 1 conference Hall, 2 field vehicles 1 staff van, 1 generator, 1 water pump, 5 computers, 10,000 square meters of compound	<b>Item</b>	<b>Spent</b>
		211103 Allowances (Inc. Casuals, Temporary)	6,394
		221003 Staff Training	1,446
		221009 Welfare and Entertainment	2,168
		221011 Printing, Stationery, Photocopying and Binding	3,613
		222001 Telecommunications	723
		222002 Postage and Courier	289
		222003 Information and communications technology (ICT)	6,812
		223004 Guard and Security services	7,226
		223005 Electricity	10,507
		224004 Cleaning and Sanitation	5,949
		224005 Uniforms, Beddings and Protective Gear	723
		227001 Travel inland	5,780
		227004 Fuel, Lubricants and Oils	7,074
		228001 Maintenance - Civil	3,252
		228002 Maintenance - Vehicles	6,411
		228003 Maintenance – Machinery, Equipment & Furniture	2,529

### Reasons for Variation in performance

<b>Total</b>	<b>70,892</b>
Wage Recurrent	0
Non Wage Recurrent	70,892
AIA	0
<b>Total For Department</b>	<b>74,650</b>
Wage Recurrent	0
Non Wage Recurrent	74,650
AIA	0

### Departments

#### Department: 10 National Livestock Resources Research

##### Outputs Provided

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

One anti-tick candidate vaccine molecule validated in various agro-ecological zones of Uganda.	On Anti-tick vaccine	<b>Item</b>	<b>Spent</b>
One broad-spectrum chimeric anti-tick vaccine formulated & evaluated	1) a. A revised protocol for the Anti-tick vaccine trial was submitted	211103 Allowances (Inc. Casuals, Temporary)	71,892
Two FMD candidate vaccines evaluated. One African swine fever candidate vaccine evaluated on station	b. Import permit for the Anti-tick vaccine trial batch was granted.	221003 Staff Training	23,885
	c. The Anti-tick vaccine trial batch was imported.	221017 Subscriptions	8,998
	d. Two meetings for supervision of the NARO Vaccine Production Facility were	222003 Information and communications technology (ICT)	32,487
		223004 Guard and Security services	6,664

# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

successfully held by the NARO engineer, Project contractor and PIs of ASF, FMD and Anti-tick vaccine project.	223005 Electricity	60,284
e. Specific cold chain equipment including vaccine carriers and fridges were procured.	224001 Medical Supplies	77,611
	224004 Cleaning and Sanitation	15,542
	224005 Uniforms, Beddings and Protective Gear	12,820
5) So far field workshops have been carried out in 11 districts and a total of 418 samples collected, out of which 155 screened microscopically showed positive and being evaluated by molecular means.	224006 Agricultural Supplies	115,475
6) DNA extraction of 160 samples was done and amount of DNA per sample determined using Nanodrop spectrophotometer. This was followed by further screening of the samples by nested PCR (nPCR). This was followed by amplification of the P67 gene which is currently going on in the lab.	225001 Consultancy Services- Short term	20,825
	227001 Travel inland	38,318
	227004 Fuel, Lubricants and Oils	49,980
	228001 Maintenance - Civil	33,320
	228002 Maintenance - Vehicles	58,310
	228003 Maintenance – Machinery, Equipment & Furniture	65,391
On FMD		
1. A locally working NARO Aluminium alhydrogel adjuvant was developed and is being evaluated for relative stability before an inactivant antigen is added to it. The formulated Al hydrogel adjuvant product is being evaluated against the Botswana and Kenyan type		
2. Evaluation of this al hydrogel is ongoing for at least 6 months to establish its Physical appearance, stability, solubility, pH, skin irritation, and rheological parameters like spreadability and extrudability.		
3. Two cell lines have been developed from primary tissues namely: The Lamb kidney cell line, and the Bovine calf kidney cell lines.		
4. Seven reference positive controls have been procured to support us in evaluating our candidate strains in the proof of concept.		
5. Two more viruses (O and SATs) were collected from Isingiro and are pending cultivation in the developed cell lines.		
6. A scaling up working protocol for the FMD vaccine has been drafted and is pending testing		
7. The Nunc Maxorp cell culture plates was acquired		

### Reasons for Variation in performance

<b>Total</b>	<b>691,800</b>
Wage Recurrent	0
Non Wage Recurrent	691,800

# 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>Budget Output: 04 Agricultural research capacity strengthened</b>			
3 livestock laboratories and one forage conservation facility maintained.	1) One livestock laboratory and one forage conservation facility maintained.	<b>Item</b>	<b>Spent</b>
Herbarium and two on-station field research facilities maintained.		211103 Allowances (Inc. Casuals, Temporary)	26,784
10 research and production facilities maintained. Livestock laboratories and one forage conservation facility maintained.	2. Physical resources (4 offices, one laboratories, 2 field machinery, office equipment) secured, maintained and fully functional	221001 Advertising and Public Relations	2,715
Herbarium and two on-station field research facilities maintained.		221007 Books, Periodicals & Newspapers	362
10 research and production facilities maintained.		221008 Computer supplies and Information Technology (IT)	3,620
		221009 Welfare and Entertainment	5,429
		221011 Printing, Stationery, Photocopying and Binding	5,791
		221012 Small Office Equipment	1,564
		222001 Telecommunications	1,448
		223005 Electricity	2,172
		224004 Cleaning and Sanitation	3,258
		226001 Insurances	464
		227001 Travel inland	2,974
		227004 Fuel, Lubricants and Oils	7,239
		228001 Maintenance - Civil	2,009
		228002 Maintenance - Vehicles	6,515
		228003 Maintenance – Machinery, Equipment & Furniture	2,425
		273102 Incapacity, death benefits and funeral expenses	7,239
<b>Reasons for Variation in performance</b>			
		<b>Total</b>	<b>82,005</b>
		Wage Recurrent	0
		Non Wage Recurrent	82,005
		AIA	0
		<b>Total For Department</b>	<b>773,805</b>
		Wage Recurrent	0
		Non Wage Recurrent	773,805
		AIA	0

### Departments

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

#### Outputs Provided

#### Budget 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	US\$ Thousand
5 sesame lines evaluated, 10 accessions of cowpea and 5 of pigeon pea characterized, one suitable soil & water conservation strategy generated & recommended for cotton production, Two farmer preferred cotton lines with industrial attributes identified	Monitored and managed 3 acres of (5 lines) sesame multi locational trials in Serere, Arua, Lira, Kitgum and Mayuge. Trials were monitored and 3 sets of field data was collected.  - Monitored and managed the first of 30 accessions) of cowpeas on station  Work on going.	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 224006 Agricultural Supplies 227001 Travel inland 227004 Fuel, Lubricants and Oils	<b>Spent</b> 10,038 11,783 29,737 11,217

### Reasons for Variation in performance

	<b>Total</b>	<b>62,774</b>
	Wage Recurrent	0
	Non Wage Recurrent	62,774
	AIA	0

### Budget Output: 04 Agricultural research capacity strengthened

14 acres of compound mowed and 3 office blocks maintained to create enabling environment for research One dissemination workshops conducted, 3 scientific committee meetings conducted to guide research	Progress on bio-pesticide: Bio-pesticides developed and protocols for their utilization produced.  14 acres of compound mowed and 3 office blocks maintained to create enabling environment for research One dissemination workshops conducted, 3 scientific committee meetings conducted to guide research.	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 213002 Incapacity, death benefits and funeral expenses 221001 Advertising and Public Relations 221007 Books, Periodicals & Newspapers 221008 Computer supplies and Information Technology (IT) 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 226001 Insurances 227001 Travel inland 227004 Fuel, Lubricants and Oils 228002 Maintenance - Vehicles	<b>Spent</b> 9,906 2,901 2,901 2,176 4,802 4,352 5,077 1,451 4,352 7,252 1,451 4,352 440 5,104 3,852 5,802
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### Reasons for Variation in performance

	<b>Total</b>	<b>66,166</b>
	Wage Recurrent	0
	Non Wage Recurrent	66,166
	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>Total For Department</b>	<b>128,939</b>
		Wage Recurrent	0
		Non Wage Recurrent	128,939
		<i>AIA</i>	0

### Departments

#### Department: 12 National Laboratories Research

#### Outputs Provided

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

3 Value added product from maize, beans, vegetables for commercialization developed. Propagation systems developed for two plant genetic resources,500 genotypes from banana Hybrid seed generated.	Puffed extruded bean snack; composite extruded bean flour for porridge	<b>Item</b>	<b>Spent</b>
	150 shoots of Psorospermum febrifugum maintained on multiplication media. 280 plantlets of sugarcane maintained in the screen house and fifty established in the field	211103 Allowances (Inc. Casuals, Temporary)	13,950
		221009 Welfare and Entertainment	543
		221011 Printing, Stationery, Photocopying and Binding	2,378
		222001 Telecommunications	418
		223005 Electricity	6,015
		224004 Cleaning and Sanitation	626
		224006 Agricultural Supplies	77,166
		227001 Travel inland	40,203
		227004 Fuel, Lubricants and Oils	3,875
		228002 Maintenance - Vehicles	501
		228003 Maintenance – Machinery, Equipment & Furniture	1,252

#### Reasons for Variation in performance

	<b>Total</b>	<b>146,923</b>
	Wage Recurrent	0
	Non Wage Recurrent	146,923
	<i>AIA</i>	0

#### Budget 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	US\$ Thousand
One batch of Agriculture Research Information Education Communication material developed and disseminated.	<p>Four information, education and communication materials (Fact sheets, manuals, leaflets and videos) have been developed to aid formulation of nutritious mixtures and for training.</p> <p>Nutritional training conducted on proper postharvest handling and Basic nutrition for 177 farmers.</p> <p>- 178 farmers and 58 other stakeholders trained on processing the 9 nutritious mixtures.</p> <p>33 farmer groups (165 farmers) trained on PHH technology use and operations.</p> <p>30 farmers trained on use, basic repair and maintenance of chippers and micro grinding mills .</p> <p>35 farmers trained in operating PHH technologies as a business enterprise.</p> <p>A post-harvest handling phone application developed</p> <p>1 student graduated with MSc.in food science and technology : Project title "Development of nutrient dense mixtures from locally available foods for children aged 1-5 years in Pallisa, Kamuli and Buyende districts".</p> <p>1 student: MSc. proposal on "Assess the effectiveness of farmer led processes in addressing post-harvest losses along maize value chain in the districts of Kamuli, Buyende and Pallisa" approved</p>	<p><b>Item</b></p> <p>211103 Allowances (Inc. Casuals, Temporary)</p> <p>221011 Printing, Stationery, Photocopying and Binding</p> <p>224006 Agricultural Supplies</p> <p>227001 Travel inland</p>	<p><b>Spent</b></p> <p>4,900</p> <p>5,680</p> <p>77,100</p> <p>15,500</p>

### Reasons for Variation in performance

<b>Total</b>	<b>103,180</b>
Wage Recurrent	0
Non Wage Recurrent	103,180
<i>AIA</i>	0

**Budget 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
One research management committees conducted to guide research Procedure for application of procedures and policies Institution machinery and equipment maintained.	One research management committees conducted to guide research  NARL institution machinery and equipment maintained  Optimal temperatures (46.1.0C) for Dorsalis established and published 2. Full protocol for hot water treatment developed (DOI: <a href="https://doi.org/10.4001/003.029.0238">https://doi.org/10.4001/003.029.0238</a> ). Identified a partner for piloting the mango hot water protocol for enhancing the export of mango; Vibrant culture for FCM set up at NARL and experiments for development time of FCM on sweetpepper initiated.	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221001 Advertising and Public Relations 221003 Staff Training 221007 Books, Periodicals & Newspapers 221008 Computer supplies and Information Technology (IT) 221009 Welfare and Entertainment 221011 Printing, Stationery, Photocopying and Binding 221012 Small Office Equipment 222001 Telecommunications 222002 Postage and Courier 223004 Guard and Security services 223005 Electricity 227001 Travel inland 227004 Fuel, Lubricants and Oils 228001 Maintenance - Civil 228002 Maintenance - Vehicles 228003 Maintenance – Machinery, Equipment & Furniture 228004 Maintenance – Other	<b>Spent</b> 33,892 7,695 5,500 2,003 9,065 7,796 7,510 2,086 1,440 211 16,714 18,757 19,732 21,489 3,721 16,996 4,763 2,712

### Reasons for Variation in performance

Not all NARL Institution machinery and equipment was maintained due to insufficient funds.

<b>Total</b>	<b>182,077</b>
Wage Recurrent	0
Non Wage Recurrent	182,077
AIA	0
<b>Total For Department</b>	<b>432,180</b>
Wage Recurrent	0
Non Wage Recurrent	432,180
AIA	0

### Departments

**Department: 13 Abi ZARDI**

### Outputs Provided

**Budget 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	US\$ Thousand
Two technology generated for increased production and productivity Two innovation developed for increased production and productivity of priority commodities to support agro-industrialisation.	One promising shrub & cattle manure combination identified ready for uptake  Apiary sites Established and maintained on station, Ten new top bar hives were procured and 5 old ones repaired, One acre of forage established and Maintained.	<b>Item</b> 221001 Advertising and Public Relations 221008 Computer supplies and Information Technology (IT) 221011 Printing, Stationery, Photocopying and Binding	<b>Spent</b> 3,955 2,637 2,637

### Reasons for Variation in performance

	<b>Total</b>	<b>9,228</b>
	Wage Recurrent	0
	Non Wage Recurrent	9,228
	<i>AIA</i>	0

### Budget Output: 04 Agricultural research capacity strengthened

One advisory committee and PARI directors forum, institute committee meetings conducted to guide and redirect research. One (02) review and planning meeting held to guide to guide and redirect research.	Zonal research agenda strengthened by two advisory committee and PARI directors forum, institute committee meetings conducted.	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221008 Computer supplies and Information Technology (IT) 221011 Printing, Stationery, Photocopying and Binding 222001 Telecommunications 223004 Guard and Security services 223005 Electricity 223006 Water 224004 Cleaning and Sanitation 224006 Agricultural Supplies 226001 Insurances 227001 Travel inland 227004 Fuel, Lubricants and Oils 228001 Maintenance - Civil	<b>Spent</b> 7,864 1,318 2,637 7,200 1,975 5,108 1,978 1,978 3,955 570 7,909 3,818 3,296
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### Reasons for Variation in performance

	<b>Total</b>	<b>49,603</b>
	Wage Recurrent	0
	Non Wage Recurrent	49,603
	<i>AIA</i>	0
	<b>Total For Department</b>	<b>58,830</b>
	Wage Recurrent	0
	Non Wage Recurrent	58,830
	<i>AIA</i>	0

### Departments

Department: 14 Bulindi ZARDI

# 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
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### Outputs Provided

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

One technology dissemination Campaign conducted in the zone to improve production, productivity and agro based industries.	5 technology dissemination Campaigns conducted on station.	<b>Item</b>	<b>Spent</b>
		224001 Medical Supplies	1,400
		224006 Agricultural Supplies	2,250

#### Reasons for Variation in performance

<b>Total</b>	<b>3,650</b>
Wage Recurrent	0
Non Wage Recurrent	3,650
AIA	0

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

Strategically focused research activities supported by 1 advisory meeting	- Research agenda strengthened holding one advisory committee	<b>Item</b>	<b>Spent</b>
2 technologies availed to farmers for Improved linkage between Bulindi ZARDI, and the communities.	- Bulindi ZARDI physical resources (offices, laboratories, field machinery, office equipment) secured, maintained and fully functional	211103 Allowances (Inc. Casuals, Temporary)	3,903
1 Annual report generated, disseminated and archived		221001 Advertising and Public Relations	5,055
Equip the institution ICT facilities of the institute		221007 Books, Periodicals & Newspapers	472
		221008 Computer supplies and Information Technology (IT)	6,740
		221009 Welfare and Entertainment	2,620
		221011 Printing, Stationery, Photocopying and Binding	3,370
		221012 Small Office Equipment	3,370
		223005 Electricity	7,110
		224001 Medical Supplies	600
		224006 Agricultural Supplies	1,786
		226001 Insurances	674
		227001 Travel inland	4,381
		227004 Fuel, Lubricants and Oils	5,026
		228002 Maintenance - Vehicles	8,425

#### Reasons for Variation in performance

<b>Total</b>	<b>53,531</b>
Wage Recurrent	0
Non Wage Recurrent	53,531
AIA	0
<b>Total For Department</b>	<b>57,181</b>
Wage Recurrent	0
Non Wage Recurrent	57,181
AIA	0

### Departments

# 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
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### Department: 15 Kachwekano ZARDI

#### Outputs Provided

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

		Item	Spent
5 sorghum genotypes generated	2 sorghum demonstration sites maintained in 6 districts in SWHAEZ.	211103 Allowances (Inc. Casuals, Temporary)	1,062
2 demonstration sites established in 6 districts in SWHAEZ	6 demo sites established.( 3 on farm and 3 on station).	224001 Medical Supplies	6,144
		227001 Travel inland	3,563
	3 new potato varieties promoted (2 - NAROPOT1, and NAROPOT3 on farm, and 3 on station including N AROPOT2). >3 districts (Rubanda, Rukiga and Kabale) were reached	227004 Fuel, Lubricants and Oils	1,470
	290 farmers were trained (170 females and 120 males) > NAROPOT3 performed better than NAROPOT1 with an average yield of 35t/ha and 29t/ha respectively better than Kinigi and NAROPOT4 with yields of 16t/ha and 13t/ha respectively..		

#### Reasons for Variation in performance

<b>Total</b>	<b>12,238</b>
Wage Recurrent	0
Non Wage Recurrent	12,238
AIA	0

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

		Item	Spent
2 Demonstration site established in 1 districts in SWHAEZ with at least 3 new potato varieties introduced	6 demo sites established.( 3 on farm and 3 on station).	221001 Advertising and Public Relations	2,488
	3 new potato varieties promoted (2 - NAROPOT1, and NAROPOT3 on farm, and 3 on station including N AROPOT2). >3 districts (Rubanda, Rukiga and Kabale) were reached	224006 Agricultural Supplies	659
	290 farmers were trained (170 females and 120 males) > NAROPOT3 performed better than NAROPOT1 with an average yield of 35t/ha and 29t/ha respectively better than Kinigi and NAROPOT4 with yields of 16t/ha and 13t/ha respectively..		

#### Reasons for Variation in performance

<b>Total</b>	<b>3,147</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	UShs Thousand
		Non Wage Recurrent	3,147
		AIA	0
<b>Budget Output: 04 Agricultural research capacity strengthened</b>			
Enhancing institutional research capacity, safe through routine monitoring (4trips), safe guarding assets, servicing of computers (20times) and infrastructure vehicles( 7) machinery (4) maintenance .	Kachwekano ZARDI physical resources enhanced (offices, laboratories, field machinery, office equipment) secured, maintained and fully functional	<b>Item</b>	<b>Spent</b>
		211103 Allowances (Inc. Casuals, Temporary)	4,236
		221001 Advertising and Public Relations	1,317
		221007 Books, Periodicals & Newspapers	481
		221008 Computer supplies and Information Technology (IT)	2,351
		221009 Welfare and Entertainment	3,451
		221011 Printing, Stationery, Photocopying and Binding	1,976
		221012 Small Office Equipment	659
		222001 Telecommunications	527
		223005 Electricity	4,939
		223006 Water	1,647
		224004 Cleaning and Sanitation	5,061
		226001 Insurances	330
		227001 Travel inland	3,428
		227004 Fuel, Lubricants and Oils	4,939
		228002 Maintenance - Vehicles	3,952

### Reasons for Variation in performance

<b>Total</b>	<b>39,291</b>
Wage Recurrent	0
Non Wage Recurrent	39,291
AIA	0
<b>Total For Department</b>	<b>54,676</b>
Wage Recurrent	0
Non Wage Recurrent	54,676
AIA	0

### Departments

#### Department: 16 Mukono ZARDI

#### Outputs Provided

#### Budget 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 agronomic practices of indigenous tomato, onions and Bambara nuts cultivars established	Established the cherry tomato characterization trial in pots with sterilised soil (due to the high disease pressure of Bacterial blight). A total of 33 accessions were planted of which 30 were indigenous accessions and three were exotic (Forteza RZ, Primrino RZ & one Korean variety); One data set on plant stand (survival) has been collected and at least 5 plants per genotype have been selected for the characterization data collection to start at flowering. In the Indigenous onion characterization trials, six accessions (from Sembabule, Mpigi, Kyegegwa, Apac, Lira and Gulu were planted; Data were carried out on the vegetative attributes (foliage colour, length, diameter); and total bulb weight. The Lira accession the tallest plants with an average plant height of 32.73 cm followed by Mpigi accession (31.52 cm), Gulu accession (31.4 cm), Kyegegwa (30.59 cm), Apac accession (29.67 cm) and Sembabule accession (29.44). Mpigi accession had the largest average number of leaves 34.1 leaves followed by Kyegegwa (24.9), Gulu (21.8), Apac (19.9), Lira (16.3) and (No Suggestions) (16.0). Lira had plants with the longest leaf length 30.0 cm followed by Gulu (27.17 cm), Apac (27.15 cm), Mpigi (25.85 cm), Kyegegwa (25.0 cm) and Sembabule (22.6 cm). Kyegegwa had the largest leaf girth of 5.64 mm followed by Mpigi (5.59 mm), Sembabule (3.22 mm), Lira (3.21 mm), Apac (2.44 mm), and Gulu (2.23 mm). The Mpigi accession yielded higher than other accessions with 6.7 kg per plot followed by (No Suggestions) (5.1 kg), Lira (4.8 kg), Gulu (4.0), Sembabule (3.6 kg) and Apac 2.7 Kg)	<b>Item</b> 221011 Printing, Stationery, Photocopying and Binding 222001 Telecommunications 223004 Guard and Security services 223005 Electricity 223006 Water 224006 Agricultural Supplies 227001 Travel inland 227004 Fuel, Lubricants and Oils	<b>Spent</b> 5,700 2,036 13,029 20,357 2,443 10,177 3,257 12,215

### Reasons for Variation in performance

<b>Total</b>	<b>69,213</b>
Wage Recurrent	0
Non Wage Recurrent	69,213
AIA	0

Budget 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	US\$ Thousand
30 key market chain actors identified. 1 potential market opportunities analyzed	1 situational analysis study done for activities, interests and needs for piggery farmers done in Mukono district . 30 piggery farmers interviewed in Ntawo and Kyampisi subcounties. One (1) Technical report written	<b>Item</b>	<b>Spent</b>
250 stakeholders reached 2 partnerships established		211103 Allowances (Inc. Casuals, Temporary)	1,250
1 potential market opportunities analyzed		224006 Agricultural Supplies	2,000
250 stakeholders engaged for improved technology promotion			
<b>Reasons for Variation in performance</b>			
		<b>Total</b>	<b>3,250</b>
		Wage Recurrent	0
		Non Wage Recurrent	3,250
		AIA	0

### Budget Output: 04 Agricultural research capacity strengthened

One potential market opportunities analyzed 1 M&E report brief developed to guide management of research 1 partnership established 1000 stakeholders reached and 2 partnerships established 120 key market chain actors identified	2 exploratory market studies conducted in Mukono and wakes; 1 for piggery and 1 for tomato. One (1) Technical report finalised.  One (1) community engagements with 60 piggery farmers in Kalungu and Lwengo. These were trained on ASF and proper piggery management. Disseminated information on urban farming to over 1000 students and pupils in the Educational agricultural show held on 8-12th June 2022. One (1) field day was held to share DOMINO project results with 100 stakeholders who included Mukono district local leaders and farmers from neighbouring villages.	<b>Item</b>	<b>Spent</b>
		211103 Allowances (Inc. Casuals, Temporary)	4,143
		221001 Advertising and Public Relations	4,386
		221003 Staff Training	1,500
		221007 Books, Periodicals & Newspapers	1,629
		221008 Computer supplies and Information Technology (IT)	6,468
		221009 Welfare and Entertainment	4,886
		221011 Printing, Stationery, Photocopying and Binding	1,629
		222002 Postage and Courier	1,222
		224004 Cleaning and Sanitation	10,004
		226001 Insurances	570
		228001 Maintenance - Civil	10,559
		228002 Maintenance - Vehicles	10,308
		228003 Maintenance – Machinery, Equipment & Furniture	4,479
		228004 Maintenance – Other	2,036
		273102 Incapacity, death benefits and funeral expenses	1,222

### Reasons for Variation in performance

<b>Total</b>	<b>65,038</b>
Wage Recurrent	0
Non Wage Recurrent	65,038
AIA	0
<b>Total For Department</b>	<b>137,500</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
		Wage Recurrent	0
		Non Wage Recurrent	137,500
		AIA	0

### Departments

#### Department: 17 Ngetta ZARDI

#### Outputs Provided

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

		Item	Spent
1 mango fruit fly IPM strategy developed	Four trainings in management of fruit flies in Alebtong, Omoro, Lira, and Gulu.	211103 Allowances (Inc. Casuals, Temporary)	1,771
1 effective technique for estimating weed seed quantity and type in soil developed	- Weed density of soils determined. Draft manuscript in place, to be submitted to reputable Journal for peer review.	221001 Advertising and Public Relations	1,740
1 integrated approach for managing weeds in maize under CA systems developed		221011 Printing, Stationery, Photocopying and Binding	103
		222001 Telecommunications	578
		224001 Medical Supplies	2,106
		224006 Agricultural Supplies	7,627
		227001 Travel inland	6,851

### Reasons for Variation in performance

	<b>Total</b>	<b>20,775</b>
	Wage Recurrent	0
	Non Wage Recurrent	20,775
	AIA	0

#### Budget 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	US\$ Thousand
One technology for food, nutrition and industry promoted with in the zone	<p>14 advanced line of High Iron and Zinc rich Bean Lines were obtained from National Bean Research program, NaCRRRI, Namulonge have been planted on station for evaluation. These include; SMG 28, SMG 29, SMN 119, SMN 120, SMR 207, UHP-1-140-SMR 153, UHP-1-172-SMR 159, UHP-1-173-SMR 106, UHP-1-176-SMR 104, SMR 206, UHP-2-27-SMN 61, SMR 298, UHP-1-136-SMR 144 and SMR 208. Data on growth parameters, pest and diseases incidence and severity was collected. The adaptive trial was maintained.</p> <p>8 varieties of groundnut (serenut 14, Naronut 1, Serenut 8, SGV0805, SGV 9904, Naronut2, Serenut 6, Serenut 7), 4 varieties of millet (Naromil1, Naromil3, Naromil4, Naromil5), 8 varieties of sorghum (Seso1, Seso 3, Narosog1, Narosog2, Narosog3, Narosog4) obtained from NASARRI, Serere were planted for onstation adaptation and multiplication. Data collection on growth parameters and pests and diseases is ongoing. Trial was maintained.</p>	<p><b>Item</b></p> <p>221001 Advertising and Public Relations</p> <p>221008 Computer supplies and Information Technology (IT)</p> <p>224006 Agricultural Supplies</p>	<p><b>Spent</b></p> <p>672</p> <p>2,016</p> <p>5,010</p>

### Reasons for Variation in performance

<b>Total</b>	<b>7,697</b>
Wage Recurrent	0
Non Wage Recurrent	7,697
<i>AIA</i>	0

**Budget 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 infrastructures maintained to aid research for products and industry. Research undertakings quidded and redirected through one research committee meeting.	Ngetta ZARDI physical resources (offices, laboratories, field machinery, office equipment) secured, maintained and fully functional	<b>Item</b>	<b>Spent</b>
		211103 Allowances (Inc. Casuals, Temporary)	143
		221008 Computer supplies and Information Technology (IT)	3,427
		221011 Printing, Stationery, Photocopying and Binding	1,680
		222001 Telecommunications	336
		223004 Guard and Security services	6,047
		223005 Electricity	2,305
		223006 Water	2,590
		224004 Cleaning and Sanitation	1,680
		227001 Travel inland	4,300
		227004 Fuel, Lubricants and Oils	5,374
		228002 Maintenance - Vehicles	5,375

### Reasons for Variation in performance

<b>Total</b>	<b>33,256</b>
Wage Recurrent	0
Non Wage Recurrent	33,256
AIA	0
<b>Total For Department</b>	<b>61,728</b>
Wage Recurrent	0
Non Wage Recurrent	61,728
AIA	0

### Departments

#### Department: 18 Nabium ZARDI

#### Outputs Provided

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

250 kgs of better performing pasture seed (8 acres of planting material) species (Chloris gayana, Centrocema, for increased production and productivity of livestock	- Produced and disseminate 250 kgs of quality seed for demonstration.	<b>Item</b>	<b>Spent</b>
		211103 Allowances (Inc. Casuals, Temporary)	5,499
		221001 Advertising and Public Relations	220
		221008 Computer supplies and Information Technology (IT)	960
		221011 Printing, Stationery, Photocopying and Binding	438
		224001 Medical Supplies	2,340
		224006 Agricultural Supplies	3,812
		227001 Travel inland	1,535
		227004 Fuel, Lubricants and Oils	1,683
		228002 Maintenance - Vehicles	1,296

### 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
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		<b>Total</b>	<b>17,781</b>
		Wage Recurrent	0
		Non Wage Recurrent	17,781
		<i>AIA</i>	0

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

Promotion and popularization of 1 selected crop, natural resources and animal value chain products and bi-products in NEAZ	Nabuin technologies exhibited during the 2nd Eastern Agricultural Show.	<b>Item</b>	<b>Spent</b>
		211103 Allowances (Inc. Casuals, Temporary)	455
		221001 Advertising and Public Relations	202
		221003 Staff Training	135
		221008 Computer supplies and Information Technology (IT)	202
		221011 Printing, Stationery, Photocopying and Binding	202
		224001 Medical Supplies	505
		224006 Agricultural Supplies	842
		227001 Travel inland	404
		227004 Fuel, Lubricants and Oils	202
		228002 Maintenance - Vehicles	270

### Reasons for Variation in performance

	<b>Total</b>	<b>3,418</b>
	Wage Recurrent	0
	Non Wage Recurrent	3,418
	<i>AIA</i>	0

### Budget 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
Local, regional, national and international cooperation on and access to science, technology, innovation and knowledge sharing enhanced.	- Nabuin ZARDI Physical resources (offices, laboratories, field machinery, office equipment) secured, maintained and fully functional. - Participated one farm clinic to facilitate access to science, technology, innovation thru knowledge sharing	<b>Item</b>	<b>Spent</b>
		211103 Allowances (Inc. Casuals, Temporary)	3,899
		221001 Advertising and Public Relations	539
		221007 Books, Periodicals & Newspapers	337
		221009 Welfare and Entertainment	1,010
		221011 Printing, Stationery, Photocopying and Binding	1,347
		222002 Postage and Courier	218
		223004 Guard and Security services	2,330
		223005 Electricity	1,523
		224004 Cleaning and Sanitation	1,452
		224005 Uniforms, Beddings and Protective Gear	428
		226001 Insurances	258
		227001 Travel inland	2,020
		227004 Fuel, Lubricants and Oils	4,809
		228001 Maintenance - Civil	2,693
		228002 Maintenance - Vehicles	6,733
		228003 Maintenance – Machinery, Equipment & Furniture	2,693
		273102 Incapacity, death benefits and funeral expenses	539

### Reasons for Variation in performance

<b>Total</b>	<b>32,824</b>
Wage Recurrent	0
Non Wage Recurrent	32,824
AIA	0
<b>Total For Department</b>	<b>54,022</b>
Wage Recurrent	0
Non Wage Recurrent	54,022
AIA	0

### Departments

**Department: 19 Mbarara ZARDI**

### Outputs Provided

**Budget 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 Carbohydrate and cellulose digesting bacteria isolated	Multinutrient blocks incorporated with two carbohydrate and cellulose digesting	<b>Item</b>	<b>Spent</b>
1 detailed research protocol developed.	probiotic bacterial strains produced for	211103 Allowances (Inc. Casuals, Temporary)	6,034
1 research protocol developed and pretested in 5 farmer groups of 2 districts	initiation of in-vivo feeding trials	223004 Guard and Security services	330
1 appropriate formula of carbohydrate & cellulose digesting bacteria packaged		224001 Medical Supplies	4,946
		224006 Agricultural Supplies	6,694
		227001 Travel inland	4,452
		227004 Fuel, Lubricants and Oils	2,473

### Reasons for Variation in performance

<b>Total</b>	<b>24,928</b>
Wage Recurrent	0
Non Wage Recurrent	24,928
AIA	0

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

Four research technologies delivered to uptake pathways for increased production and productivity.	Energy saving, PAF free and small scale fish farmer friendly smoker prototype developed. 10kg of fish fingers and fish borne meal produced, evaluated . 10 dairy cattle(5 heifers and 5 young bulls) of improved genetics availed to farmers. The anti-microbial activity of five starter culture strains determined .	<b>Item</b>	<b>Spent</b>
		222003 Information and communications technology (ICT)	1,194
		224006 Agricultural Supplies	2,785

### Reasons for Variation in performance

<b>Total</b>	<b>3,979</b>
Wage Recurrent	0
Non Wage Recurrent	3,979
AIA	0

### Budget 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
Maintenance of institute IT infrastructures 15 institute research facilities maintained Assorted institute machinery maintained 1 round in the quarter	- Mbarara ZARDI physical resources (offices, laboratories, field machinery, office equipment) secured, maintained and fully functional 320 Experimental animals maintained.	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221001 Advertising and Public Relations 221008 Computer supplies and Information Technology (IT) 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 226001 Insurances 227001 Travel inland 227004 Fuel, Lubricants and Oils 228001 Maintenance - Civil 228002 Maintenance - Vehicles 228003 Maintenance – Machinery, Equipment & Furniture	<b>Spent</b> 1,957 1,085 1,649 1,979 2,638 660 3,957 2,638 1,319 2,638 399 3,957 3,295 989 3,877 989

### Reasons for Variation in performance

<b>Total</b>	<b>34,023</b>
Wage Recurrent	0
Non Wage Recurrent	34,023
AIA	0
<b>Total For Department</b>	<b>62,930</b>
Wage Recurrent	0
Non Wage Recurrent	62,930
AIA	0

### Departments

**Department: 20 Buginyaya ZARDI**

### Outputs Provided

**Budget 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	US\$ Thousand
2 effective foundation seed systems for Orange Fleshed Sweet Potato validated & promoted for utilization of Vit A rich food in Busoga sub region	0.5 tons of seed harvested. Narobebean 6 was the most most drought tolerant and high yielding (2.0t/ha).	<b>Item</b>	<b>Spent</b>
2 of elite breeders seed for niche products of elite arabica coffee & brewing cassava varieties availed	All cassava varieties ready for planting.Variety UG120/15 most vigorous One acre of land prepared for sweetpotato multiplication (Narspot 8 and Narospot 1) at Ikulwe Application of Copper Nordox 75 soon after harvest reduces occurrence of Coffee Leaf Rust by 60% across sprayed fields 75000 seedlings in nursery ready for uptake in 2022B Two apple orchards and mother garden maintained at Buginyanya main station. Two hass avocado mother gardens maintained at Buginyanya main station Tree seedlings raised and maintained on the nursery for uptake by the different pathways Eucalyptus 11,846. Maesopsis emnii 263, Prunus africana  96,765 minitubers produced from EGS Unit	211103 Allowances (Inc. Casuals, Temporary)	4,902
		221011 Printing, Stationery, Photocopying and Binding	393
		224001 Medical Supplies	2,841
		224006 Agricultural Supplies	13,075
		227001 Travel inland	9,037
		227004 Fuel, Lubricants and Oils	4,058
		228002 Maintenance - Vehicles	604

### Reasons for Variation in performance

<b>Total</b>	<b>34,908</b>
Wage Recurrent	0
Non Wage Recurrent	34,908
<b>AIA</b>	<b>0</b>

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

One fish farmers supported in improved fish farming	- Five fish farmers and ten extension workers trained on fish farm management to Mbale fish fry centre.	<b>Item</b>	<b>Spent</b>
Two niche products and accompanying productivity improvement identified		211103 Allowances (Inc. Casuals, Temporary)	5,799
Economic value from use of new coffee berry disease disease management options in Mt. Elgon		221011 Printing, Stationery, Photocopying and Binding	478
		224001 Medical Supplies	3,034
		224006 Agricultural Supplies	13,313
		227001 Travel inland	11,001
		227004 Fuel, Lubricants and Oils	5,463

### Reasons for Variation in performance

<b>Total</b>	<b>39,086</b>
Wage Recurrent	0
Non Wage Recurrent	39,086
<b>AIA</b>	<b>0</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
<b>Budget Output: 04 Agricultural research capacity strengthened</b>			
1 agriculture technologies developed & disseminated, 1 agriculture technologies developed & disseminated for uptake	Buginyanya ZARDI physical resources (offices, laboratories, field machinery, office equipment) secured, maintained and fully functional	<b>Item</b>	<b>Spent</b>
		211103 Allowances (Inc. Casuals, Temporary)	8,544
		221007 Books, Periodicals & Newspapers	1,221
		221009 Welfare and Entertainment	814
		221011 Printing, Stationery, Photocopying and Binding	2,848
		221012 Small Office Equipment	1,628
		222001 Telecommunications	3,255
		222003 Information and communications technology (ICT)	3,255
		223004 Guard and Security services	4,069
		223005 Electricity	2,441
		223006 Water	2,441
		224004 Cleaning and Sanitation	2,035
		226001 Insurances	814
		227001 Travel inland	4,066
		227004 Fuel, Lubricants and Oils	6,125
		228001 Maintenance - Civil	2,034
		228002 Maintenance - Vehicles	6,103
		228003 Maintenance – Machinery, Equipment & Furniture	2,035
		228004 Maintenance – Other	2,035
		273102 Incapacity, death benefits and funeral expenses	814

### Reasons for Variation in performance

<b>Total</b>	<b>56,572</b>
Wage Recurrent	0
Non Wage Recurrent	56,572
AIA	0
<b>Total For Department</b>	<b>130,566</b>
Wage Recurrent	0
Non Wage Recurrent	130,566
AIA	0

### Departments

#### Department: 21 Rwebitaba ZARDI

#### Outputs Provided

#### Budget 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	US\$ Thousand
250 open pollinated seeds collected from selected	1) Maintain 30,000 tea seedlings of 10 elite tea clones in the nursery meant for agronomic management practices experiment.	<b>Item</b>	<b>Spent</b>
2 elite parents from the existing germplasm conserved identified		211103 Allowances (Inc. Casuals, Temporary)	21,631
10 tea clones characterized for biochemical attributes		221011 Printing, Stationery, Photocopying and Binding	7,927
		224001 Medical Supplies	7,099
		224006 Agricultural Supplies	54,905
		227001 Travel inland	18,439
		228002 Maintenance - Vehicles	6,862
		228003 Maintenance – Machinery, Equipment & Furniture	2,500

### Reasons for Variation in performance

<b>Total</b>	<b>119,362</b>
Wage Recurrent	0
Non Wage Recurrent	119,362
<b>AIA</b>	<b>0</b>

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

1 tons and 1.5 tons of potato and bean foundation seed respectively harvested and availed to community seed systems/ local seed	2 acres of potato (NAROPOT 1 & NAROP 3 varieties), 2 acres of beans (NABE 16, NARO Bean 1 and NARO Bean 2) and 2 acres of maize (Bazooka, Longe 10H and WE 2114 varieties) demonstration fields planted and maintained on station 1 acre banana demonstration field established on farm being maintained and training in good agronomic practices ongoing	<b>Item</b>	<b>Spent</b>
		211103 Allowances (Inc. Casuals, Temporary)	1,161
		221011 Printing, Stationery, Photocopying and Binding	265
		224006 Agricultural Supplies	7,401
		227001 Travel inland	829
	Held 2 exposure visits for 18 LC1 Chairpersons of Rwengaju Model Village (17 male and 1 female) and 18 District councillors from Kasese (12 male and 6 female) to technologies being promoted. Followed up and trained 63 Group members in the five (5) groups in good agronomic practices and record keeping done with community seed systems (QDS for beans and potato)		

### Reasons for Variation in performance

<b>Total</b>	<b>9,656</b>
Wage Recurrent	0
Non Wage Recurrent	9,656

# 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>Budget Output: 04 Agricultural research capacity strengthened</b>			
One Advisory committee, one PARI director's forum meetings and and 3 institute committee meetings held to guide research activities The institute machinery and equipment maintained The institute research facilities maintained	One advisory committee, one institute committee meetings held to guide research activities The institute machinery and equipment maintained The institute research facilities maintained and fully functional.	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 213002 Incapacity, death benefits and funeral expenses 221007 Books, Periodicals & Newspapers 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	<b>Spent</b> 5,160 669 796 1,592 1,989 995 1,459 1,592 4,145 2,918 995 176 6,218 3,647 995 897

### Reasons for Variation in performance

<b>Total</b>	<b>34,238</b>
Wage Recurrent	0
Non Wage Recurrent	34,238
AIA	0
<b>Total For Department</b>	<b>163,255</b>
Wage Recurrent	0
Non Wage Recurrent	163,255
AIA	0

### Departments

#### Department: 26 NARO Internal Audit

#### Outputs Provided

#### Budget 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	US\$ Thousand
1 end of year annual Audit performance workshop conducted	1) 4 internal audit staff train in enterprise risk management with IIA	<b>Item</b>	<b>Spent</b>
Two Audit reports developed: One Off budget project audit report	2) Hands on training, coaching of audit staff, review of reports and working papers at MuZARDI	221003 Staff Training	2,800
One audit report on assets utilization and safety, compliance with PPDA Act report produced.	3) One Audit inspection of experimental trial sites for the Anti - tick vaccine	227001 Travel inland	70,252
One ICT , Human Resource and CGS value for money audit report produced	4) One report on advising on effective management of governance, social and environmental aspects.		
	5) Consultative risk management meetings at PARIs to indentify risks, mitigation controls and update of the risk register held		
	6) Produce a report on comprehensive compliance risk assessment of financial and accountability processes. Human Resources Audit report produced.		
	7) On going Capital development audit report produced.		
	8) Audit report on Fleet Management and Utilities		
	9) CGS Projects/Value for Money Audit report produced.		
	10) Risk Register updated.		

### Reasons for Variation in performance

<b>Total</b>	<b>73,052</b>
Wage Recurrent	0
Non Wage Recurrent	73,052
AIA	0
<b>Total For Department</b>	<b>73,052</b>
Wage Recurrent	0
Non Wage Recurrent	73,052
AIA	0

### Departments

Department: 27 National Coffee Research Institute

### Outputs Provided

Budget 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	US\$ Thousand
One high value coffee & cocoa products prototypes developed 5 putative red blister resistant, 2 putative BCTB tolerant and 5 putative drought tolerant accessions collected cloned for phenotyping 5,000 TC-derived coffee plantlets produced & delivered. Ide	On station culinary tests conducted to start the cocoa wine validation process of the protocept developed..  On station culinary tests conducted to start the Chocolate protocepts validation process of the 2 protocepts developed..	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221001 Advertising and Public Relations 221007 Books, Periodicals & Newspapers 221011 Printing, Stationery, Photocopying and Binding 224006 Agricultural Supplies 225001 Consultancy Services- Short term 227001 Travel inland 227004 Fuel, Lubricants and Oils	<b>Spent</b> 2,437 1,108 2,030 118 4,895 14,141 13,259 2,556

### Reasons for Variation in performance

<b>Total</b>	<b>40,541</b>
Wage Recurrent	0
Non Wage Recurrent	40,541
AIA	0

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

Research and extension interface promoted and strengthened through maintenance of ITC infrastructure Promotion of better coffee varieties	Coffee-infused yoghurt. Product isis being refined with commercially available yoghurt stabilisers.	<b>Item</b> 221008 Computer supplies and Information Technology (IT)	<b>Spent</b> 1,772
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### Reasons for Variation in performance

Contribution of off-budget projects.

<b>Total</b>	<b>1,772</b>
Wage Recurrent	0
Non Wage Recurrent	1,772
AIA	0

### Budget Output: 04 Agricultural research capacity strengthened

Research capacity strengthened through One 1 (01) advisory committee meetings, routine maintenance of research infrastructure, machinery and equipment, securing research activity sites and motivating staff notify more CWD pathogen specific primers	NACORI human resources and physical resources (offices, laboratories, field machinery, office equipment) secured, maintained and fully functional - two administrative, policy and all mandatory reports prepared and submitted. - Staff wages and security services sourced and paid during the quarter.	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary) 221001 Advertising and Public Relations 227004 Fuel, Lubricants and Oils	<b>Spent</b> 7,178 1,846 33,118
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### Reasons for Variation in performance

<b>Total</b>	<b>42,142</b>
Wage Recurrent	0
Non Wage Recurrent	42,142
AIA	0
<b>Total For Department</b>	<b>84,455</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	UShs Thousand
		Wage Recurrent	0
		Non Wage Recurrent	84,455
		AIA	0

### Development Projects

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

##### Outputs Provided

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

		Item	Spent
60 elite calves produced to constitute the elite research and embryo production herd at NaLIRRI	Managed and monitored 39 calves were (21 males and 18 Females) to constitute the elite research and embryo production herd at NaLIRRI.	211103 Allowances (Inc. Casuals, Temporary)	10,000
Five hundred (500) tons of silage and hay produced to support livestock dry season farming for improved production and productivity		224001 Medical Supplies	15,000
50 tons of grain soya, maize and sunflower produced		224006 Agricultural Supplies	15,000
MT tons		227001 Travel inland	5,000
		227004 Fuel, Lubricants and Oils	10,000
		228002 Maintenance - Vehicles	5,000

##### Reasons for Variation in performance

<b>Total</b>	<b>60,000</b>
GoU Development	60,000
External Financing	0
AIA	0

### Capital Purchases

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



# 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
One gender and equity responsive office block with a store renovated at Nakyesasa.	A) civil works progress at 100%; 1) Project: Construction of Assorted Infrastructure at Maruzi; a) Hay barn at Nakyesasa complete, waterborne toilet completed; c) Container Residential units at maruzi; d) Hay barn at Maruzi; e) Construction of Maruzi Access Road-8KM, 99% complete; f) Construction/ Extension of power line & Reticulation to the Maruzi Farm-Apac; g) Construction of Residential staff blocks at Maruzi	<b>Item</b> 312101 Non-Residential Buildings 312102 Residential Buildings 312104 Other Structures	<b>Spent</b> 853,692 599,687 180,000
One all inclusive administration block constructed at Maruzi.	B) Civil works with progress at various levels 2) Vaccine production facility 65% 4) Project: Construction of Assorted Infrastructure at Maruzi a) Residential container units 75% complete; b) Paddock at 52% (14 fully done, 12 not complete), cattle dip at 80% and water reticulation at 75%; c) Renovation of Hostel, Lab & Office Blocks, 45%; d) Construction of Calf/Heifer Barn, 52%; e) Water extension project to Maruzi, 24% f) Extra works at Maruzi-Assorted works, 90%;		
One hay barn constructed at Nakyesasa 500 meter tarmack initiated for increased access to the facilities established.			

### Reasons for Variation in performance

Procurement processes concluded but not signed due to limited funds.

a) Construction of a Main Admin Block at Maruzi;

b) Construction of a Grain Store and Hay Barn

<b>Total</b>	<b>1,633,379</b>
GoU Development	1,633,379
External Financing	0
AIA	0
<b>Total For Project</b>	<b>1,693,379</b>
GoU Development	1,693,379
External Financing	0
AIA	0

### Development Projects

#### Project: 1619 Retooling of National Agricultural Research Organization

##### Outputs Provided

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

50 technologies generated, 20 innovations developed to support improved production and productivity for accelerated agro	Thru CGS support was given development of 50 technologies which include: 1. Essential oils as input for AroNutro	<b>Item</b> 211103 Allowances (Inc. Casuals, Temporary)	<b>Spent</b> 256,847
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# Vote:142 National Agricultural Research Organisation

## QUARTER 4: Outputs and Expenditure in Quarter

Industrialization.	instant maize flour are being readied for Aronutro instant maize snack brands.	221001 Advertising and Public Relations	67,772
	2). Biodegradable Nano-surface package for increased trade of fresh foods is being developed.	221002 Workshops and Seminars	200,000
	3). NARO is upscaling pre-cooked bio-preserved bean.	221003 Staff Training	42,439
	4). NARO is out-scaling polycyclic aromatic hydrocarbon safe smoking technologies for increased market competitiveness of fish value chain actors.	221006 Commissions and related charges	141
		221008 Computer supplies and Information Technology (IT)	19,229
		221011 Printing, Stationery, Photocopying and Binding	28,200
		222001 Telecommunications	185
	5). Technical performance of NAROFIK 3-Kilns with gas as alternative energy source was conducted.	222003 Information and communications technology (ICT)	231,690
	6) 5 Parents matching product file traits identified from 38 sunflower hybrids were analysed for oil content.	223005 Electricity	6,160
		223006 Water	822
	6) One NPT established in four locations (Abi ZARDI, Serere, Ikulwe and Ngeta) for evaluation of the 19 selected cassava godo lines.	224001 Medical Supplies	122,829
	7) One food and one feed product (cassava compos- itebread enhanced with locally available protein) were developed.	224005 Uniforms, Beddings and Protective Gear	571
	8) Stakeholder meeting carried with PALM Corps to discuss business models for the of Cassava Value addition.	224006 Agricultural Supplies	2,632,587
	9) Triple rust resistant wheat varieties with desired end-use qualities to meet increased and diversified demands for food, feed and industry are being developed.	225001 Consultancy Services- Short term	55,112
	10) Wheat productivity is being enhanced through sustainable access and utilization of breeders seed in Uganda.	227001 Travel inland	600,294
	11) NARO is developing bio-fortified maize varieties adapted to the highland areas released with 9-12t/ha potential.	227004 Fuel, Lubricants and Oils	58,027
	12) use of plasma reactors in the production of artificial fertilizer. Shelf life and storage conditions of fertilizers made from Plasma assisted Nitrogen fixation was determined.	228002 Maintenance - Vehicles	20,220
	13) Four products from Shea fruit pulp and Shea nuts developed for commercialization.	228003 Maintenance – Machinery, Equipment & Furniture	3,768
	14) NARO is enhancing tea breeding for increased productivity and quality in Uganda. A total of 46 tea accession with unique attributes collected and cloned		
	15) Conducted an on farm evaluation of tea.		

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
<i>Reasons for Variation in performance</i>			
Limited space to report all the CGS achievements.			
			<b>Total</b> 4,346,893
			GoU Development 4,346,893
			External Financing 0
			AIA 0

Budget 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	US\$ Thousand
Two technology promotion interfaces conducted	<p>1. NARO is delivering technological innovations to uptake pathways by operationalizing the domino effect model. This is to enhance technology adoption and increase awareness of the relevance of participating PARIs and their research outputs in the zones. 4 horticultural demos were to be established in the 4 participating ZARDIs, where one demo at the Institute and at least 3 in 3 communities around the ZARDI.</p> <p>a. At Bulindi ZARDI, there is a demo at the Institute; at Ntakaganagaho Juma in Kisiramu Kibaire; at Bigirwa Joseph in Kakitara.</p> <p>b. At Mukono ZARDI, there is a demo at the Institute; and in Mungwe Farmers' group (35 members) hosted by Ms Annet Namaganda in Mpungwe village, Kikandwa Parish, Kakiri Sub-county, Wakiso District.</p> <p>c. At Ngetta ZARDI, there two demos at the Institute (at the irrigation site and also along the Road – manually irrigated using water in a plastic tank); also on farm in the Olwenyi farmers' group (30 members). For both sites the seedlings planting was completed by Mid February 2022.</p> <p>d. At Abi ZARDI, there is one demo in the irrigation area; also in Egara East Village, Manibe Sub-county, Ombokoro Parish Arua District. The demos were planted by mid February</p> <p>e. 3 district councils visited the demos on the station; • Intern students were able to learn from these demos;</p> <p>f. Open days and feedback sessions were held in BuZARDI, MuZARDI, NgeZARDI and AbiZARDI.</p> <p>2). Four radio talk shows held in Karamoja on Brucellosis.</p> <p>3) Two technology promotion clinics conducted.</p> <p>4) Two automated technology promotion tools developed.</p> <p>5) 10 seed company engaged in partnerships for technology multiplication and promotion.</p>	<b>Item</b>	<b>Spent</b>
Two automated technology promotion tools developed		211103 Allowances (Inc. Casuals, Temporary)	78,281
34 technological innovations delivered to uptake pathways		221001 Advertising and Public Relations	104,167
5 partnerships developed for technology multiplication and promotion		221002 Workshops and Seminars	261,000
		221003 Staff Training	19,103
		221007 Books, Periodicals & Newspapers	1,521
		221008 Computer supplies and Information Technology (IT)	11,961
		221011 Printing, Stationery, Photocopying and Binding	22,192
		222001 Telecommunications	203
		222003 Information and communications technology (ICT)	115,616
		224001 Medical Supplies	6,776
		224006 Agricultural Supplies	208,706
		227001 Travel inland	248,908
		227004 Fuel, Lubricants and Oils	8,482
		228001 Maintenance - Civil	86,855
		228002 Maintenance - Vehicles	1,370
		228003 Maintenance – Machinery, Equipment & Furniture	424

### Reasons for Variation in performance

<b>Total</b>	<b>1,175,565</b>
GoU Development	1,175,565
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	US\$ Thousand
<b>Budget Output: 04 Agricultural research capacity strengthened</b>			
4 research institutes research infrastructure maintained	1) Fencing of part of Kigumba land in Kiryandongo District at 50% completion..	<b>Item</b>	<b>Spent</b>
One institute laboratory supported for accreditation	2) Construction, Extension of Power-line and reticulation to the Maruzi Farm, 95% completion . 3) Upgrading the Irrigation Water System, 50% completion. 4)	211103 Allowances (Inc. Casuals, Temporary)	30,808
4 laboratory equipment maintained/serviced	Establishment of a Incubation Hub at Mukono ZARDI, 99% completion. . 5)	221001 Advertising and Public Relations	406
NARO wide training plan 2021_22 developed	Construction of a Screen House at NaFORRI, 99% completion. 6)	221003 Staff Training	239,945
	Constructon of a Road Network at Nalirri, 60% completion	221004 Recruitment Expenses	5,365
		221006 Commissions and related charges	339
		221007 Books, Periodicals & Newspapers	5,200
		221008 Computer supplies and Information Technology (IT)	879,643
		221009 Welfare and Entertainment	35,705
		221011 Printing, Stationery, Photocopying and Binding	29,014
		221012 Small Office Equipment	1,149
		221016 IFMS Recurrent costs	20,050
		221017 Subscriptions	2,753
		222003 Information and communications technology (ICT)	17,749
		223002 Rates	50,000
		223005 Electricity	716
		223006 Water	4,052
		224004 Cleaning and Sanitation	244
		225001 Consultancy Services- Short term	193,291
		226002 Licenses	69,464
		227001 Travel inland	103,827
		227004 Fuel, Lubricants and Oils	53,369
		228001 Maintenance - Civil	17,451
		228002 Maintenance - Vehicles	9,647
		228003 Maintenance – Machinery, Equipment & Furniture	4,241
		228004 Maintenance – Other	1,626

### Reasons for Variation in performance

Due to insufficient funds. the following was not undertaken:

- 1) Laboratory equipment not maintained/serviced
- 2) One institute laboratory supported for accreditation
- 3) NARO wide training plan 2021\_22 not developed due to insufficient funds.

<b>Total</b>	<b>1,776,053</b>
GoU Development	1,776,053
External Financing	0
AIA	0

### Outputs Funded

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

# 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
Quarterly Compliance to 6 international organizations (CGIAR, ASERECA, FARA, CABI WADRA and BeCA) and autonomous institutions strengthened.	Quarterly compliance to 6 international organizations (CGIAR, ASERECA, FARA, CABI WADRA and BeCA) and autonomous institutions strengthened.	<b>Item</b>	<b>Spent</b>
		262201 Contributions to International Organisations (Capital)	907,007
		264101 Contributions to Autonomous Institutions	44,000

### Reasons for Variation in performance

<b>Total</b>	<b>951,007</b>
GoU Development	951,007
External Financing	0
AIA	0

### Capital Purchases

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

Five Agricultural research facilities across four public research Institutes of NaCCORI multipurpose cocoa and coffee research laboratory, NARL, NaLIRRI multipurpose vaccine research and Production laboratory and Rwebitaba tea research laboratory completed for efficient delivery of research services to accelerate Agro Industrialization.	<p>A) civil works progress at 100%;</p> <p>1) Multipurpose Laboratory at NaCORI;</p> <p>2) Aquatic Diagnostic Laboratory-Kajjansi;</p> <p>3) Construction of Screen House at NaFoRRI;</p> <p>4) Rehabilitation &amp; Remodeling of NARO Incubation centre at Mukono ZARDI, Ntawo campus;</p> <p>5) Renovation and Remodeling of Bugusege-Guest House into Residential House (NaCORI).</p> <p>B) Civil works with progress at various levels</p> <p>1) Aflasafe plant 80%</p> <p>2) Construction of Administration block at NARL-Namalere (AEATREC) - 60%</p> <p>3) NARO Sec Offices, Entebbe</p> <p>a) Construction of Reception at Gate,</p> <p>b) Renovation of Naro Village, Canteen Toilets &amp; Kitchen at 30%.</p>	<b>Item</b>	<b>Spent</b>
		281504 Monitoring, Supervision & Appraisal of Capital work	607,501
		312101 Non-Residential Buildings	8,057,725
		312102 Residential Buildings	288,324
		312104 Other Structures	832,714

### Reasons for Variation in performance

<b>Total</b>	<b>9,786,264</b>
GoU Development	9,786,264
External Financing	0
AIA	0

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

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## 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
Two Agricultural intelligence tool acquired to support research decision making. One Agricultural Research Big data center developed to support data collection management and disseminations. Four digital research platforms developed  Three NARO knowledge products developed for technology dissemination One value chain, digital online plat form developed	1) One digital platforms developed One on NARO incubation system.	<b>Item</b> 312213 ICT Equipment	<b>Spent</b> 30,000

### Reasons for Variation in performance

<b>Total</b>	<b>30,000</b>
GoU Development	30,000
External Financing	0
AIA	0

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

One Incubation facility equipment acquired and installed at Mukono ZARDI to support incubation of technologies for industrial stimulation.	One Incubation facility equipment acquired and installed at Mukono ZARDI at 70% completion.	<b>Item</b> 312202 Machinery and Equipment 312214 Laboratory Equipments	<b>Spent</b> 808,454 100,000
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### Reasons for Variation in performance

<b>Total</b>	<b>908,454</b>
GoU Development	908,454
External Financing	0
AIA	0

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

Continued to furnish agriculture research facilities at NaLIRRI and Rwebitaba, NAFORRI, NACORI and others.	One agriculture research facility at NaCORI furnished at 90% to create enabling environment for Cocoa and coffee.	<b>Item</b> 312203 Furniture & Fixtures	<b>Spent</b> 118,995
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### Reasons for Variation in performance

<b>Total</b>	<b>118,995</b>
GoU Development	118,995
External Financing	0
AIA	0
<b>Total For Project</b>	<b>19,093,230</b>
GoU Development	19,093,230
External Financing	0
AIA	0

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

	<b>GRAND TOTAL</b>	<b>36,723,231</b>
	Wage Recurrent	8,558,307
	Non Wage Recurrent	7,378,315
	GoU Development	20,786,609
	External Financing	0
	AIA	0